

CHAPTER 6

RESTORATION STRATEGIES IN THE NOLICHUCKY RIVER WATERSHED

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6.1. BACKGROUND.

The Watershed Water Quality Management Plan serves as a comprehensive inventory of resources and stressors in the watershed, a recommendation for control measures, and a guide for planning activities in the next five-year watershed cycle and beyond. Water quality improvement will be a result of implementing both regulatory and nonregulatory programs.

In addition to the NPDES program, some state and federal regulations, such as the TMDL and ARAP programs, address point and nonpoint issues. Construction and MS4 storm water rules (implemented under the NPDES program) have transitioned from Phase 1 to Phase 2. More information on storm water rules may be found at: <http://www.state.tn.us/environment/wpc/stormh2o/>.

This Chapter addresses point and nonpoint source approaches to water quality problems in the Nolichucky River Watershed as well as specific NPDES permittee information.

6.2. COMMENTS FROM PUBLIC MEETINGS. Watershed meetings are open to the public, and most meetings were represented by citizens who live in the watershed, NPDES permittees, business people, farmers, and local river conservation interests. Locations for meetings were chosen after consulting with people who live and work in the watershed. Everyone with an interest in clean water is encouraged to be a part of the public meeting process. The times and locations of watershed meetings are posted at: <http://www.state.tn.us/environment/wpc/watershed/public.shtml>.

6.2.A. Year 1 Public Meeting. The first Nolichucky River Watershed public meeting was held on December 7, 2000, at the Ruritan Club Building in Limestone, Tennessee. The goals of the meeting were to: (1) present, and review the objectives of, the Watershed Approach, (2) introduce local, state, and federal agency and nongovernmental organization partners, (3) review water quality monitoring strategies, and (4) solicit input from the public.

Major Concerns/Comments

- How do we restore flow to natural levels
- How is public health assured when emergency conditions are allowed for industries?
- Do fines and penalties go toward restoring the Nolichucky River?
- What's the status of the uranium processing facility in the watershed?
- Concern about higher cancer frequency in the watershed.
- Will there be new laws to control livestock waste?
- Violators must be addressed immediately after documentation is complete.
- Can various agencies work together to address urbanization before it's a problem?

6.2.B. Year 3 Public Meeting. The second Nolichucky River Watershed public meeting was held on December 12, 2002, at the Ruritan Club Building in Limestone, Tennessee. The goals of the meeting were to: (1) provide an overview of the watershed approach, (2) review the monitoring strategy, (3) summarize the most recent water quality assessment, (4) discuss the TMDL schedule and citizens' role in commenting on draft TMDLs, and (5) discuss BMPs and other nonpoint source tools available through the Tennessee Department of Agriculture 319 Program and NRCS conservation assistance programs.

6.2.C. Year 5 Public Meeting. Not yet scheduled.

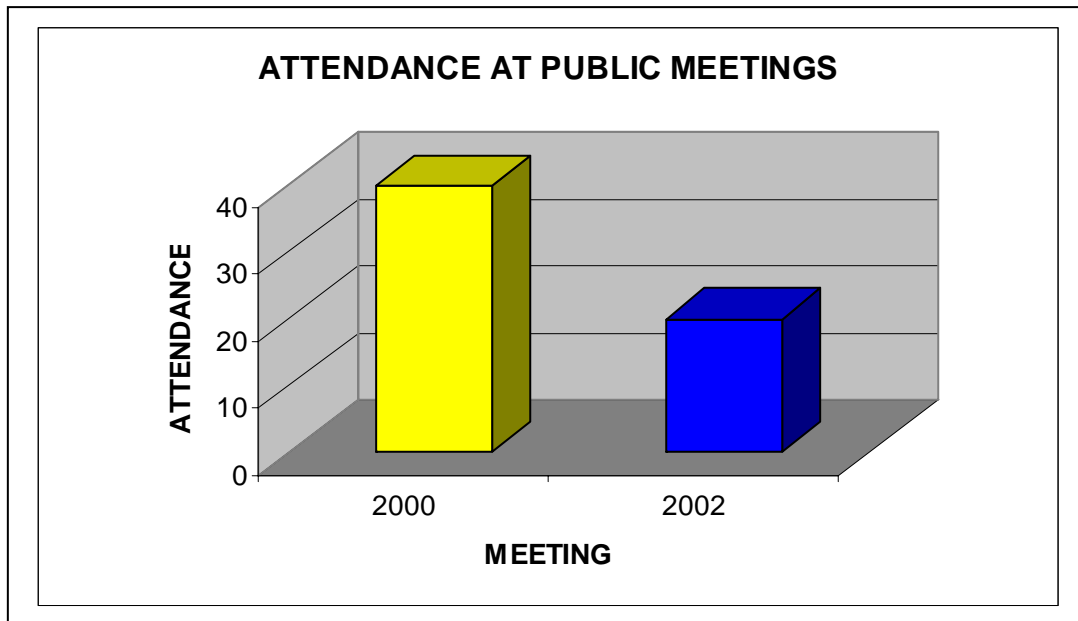


Figure 6-1. Attendance at the Nolichucky River Watershed Public Meetings. Attendance numbers do not include TDEC personnel.

6.3. APPROACHES USED.

6.3.A. Point Sources. Point source contributions to stream impairment are primarily addressed by NPDES and ARAP permit requirements and compliance with the terms of the permits. Notices of NPDES and ARAP draft permits available for public comment can be viewed at <http://www.state.tn.us/environment/wpc/wpcppo/>. Discharge monitoring data submitted by NPDES-permitted facilities may be viewed at http://www.epa.gov/enviro/html/pcs/pcs_query_java.html.

The purpose of the TMDL program is to identify remaining sources of pollution and allocate pollution control needs in places where water quality goals are still not being achieved. TMDL studies are tools that allow for a better understanding of load reductions necessary for impaired streams to return to compliance with water quality standards. More information about Tennessee's TMDL program may be found at: <http://www.state.tn.us/environment/wpc/tmdl/>.

Approved TMDL:

Nolichucky River Watershed - Total Maximum Daily Load for E. Coli in the Nolichucky River Watershed in Cocke, Greene, Hamblen, Hawkins, Unicoi and Washington Counties. Approved 03/05/2007.

<http://state.tn.us/environment/wpc/tmdl/approvedtmdl/NolichuckyEcoli.pdf>

Nolichucky River Watershed - Total Maximum Daily Load for Siltation and Habitat Alteration in the Nolichucky River Watershed in Cocke, Greene, Hamblen, Hawkins, Jefferson, Unicoi and Washington Counties. Approved 02/26/2008.

<http://state.tn.us/environment/wpc/tmdl/approvedtmdl/NolichuckySed.pdf>

TMDLs are prioritized for development based on many factors.

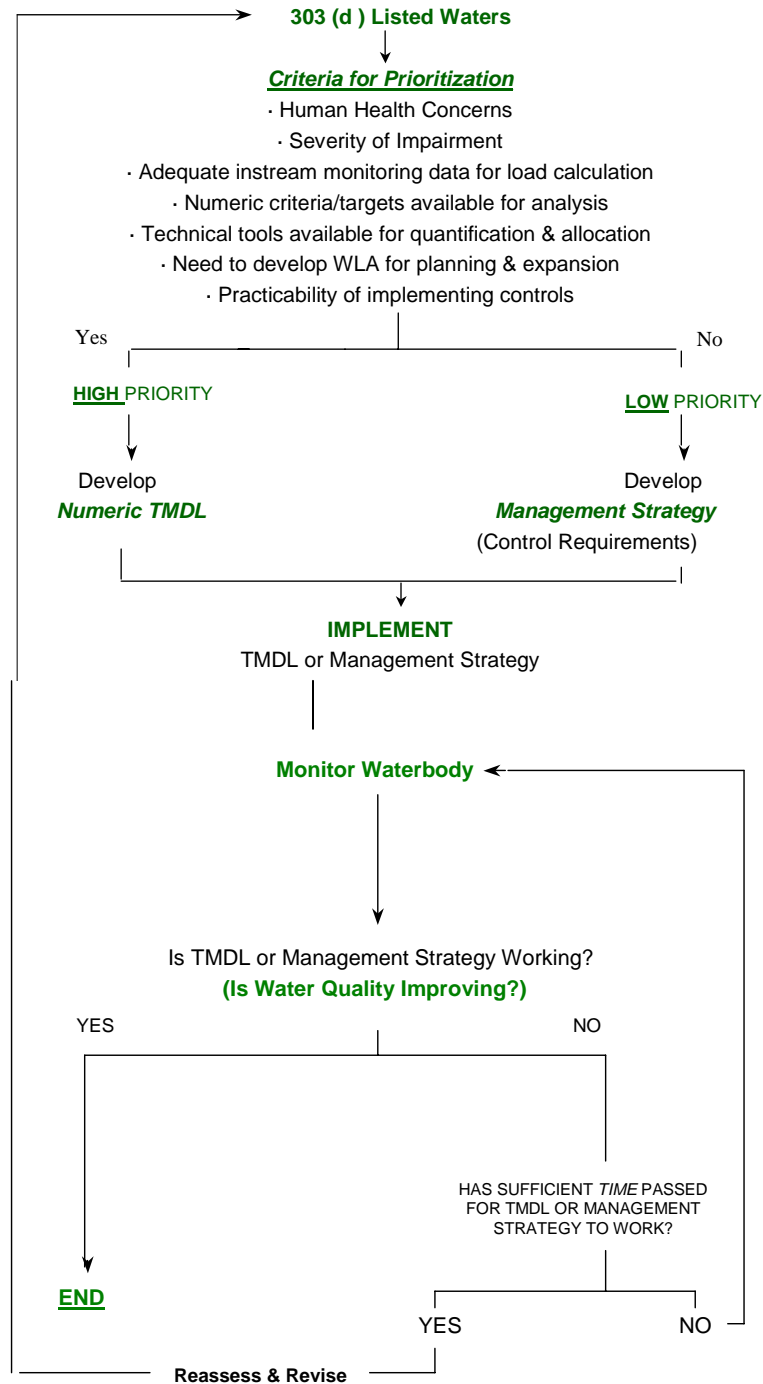


Figure 6-2. Prioritization Scheme for TMDL Development.

6.3.B. Nonpoint Sources

Common nonpoint sources of pollution include urban runoff, riparian vegetation removal, and inappropriate land development, agricultural, and road construction practices. Since nonpoint pollution exists essentially everywhere rain falls, existing point source regulations can have only a limited effect. Other measures are, therefore, necessary.

There are several state and federal regulations that address some of the contaminants impacting waters in the Nolichucky River Watershed. Most of these are limited to only point sources: a pipe or ditch. Often, controls of point sources are not sufficient to protect waters, so other measures are necessary. Some measures include efforts by landowners and volunteer groups and the possible implementation of new regulations. Many agencies, such as the Tennessee Department of Agriculture (TDA) and the Natural Resources Conservation Service (NRCS), offer financial assistance to landowners for corrective actions (like Best Management Practices) that may be sufficient for recovery of impacted streams. Many nonpoint problems will require an active civic involvement at the local level geared towards establishment of improved zoning guidelines, building codes, streamside buffer zones and greenways, and general landowner education.

The following text describes types of impairments, possible causes, and suggested improvement measures. Restoration efforts should not be limited to only those streams and measures suggested below.

6.3.B.i. Sedimentation.

6.3.B.i.a. From Construction Sites. Construction activities have historically been considered “nonpoint sources.” In the late 1980’s, EPA designated them as being subject to NPDES regulation if more than 5 acres were being disturbed. In the spring of 2003, that threshold became 1 acre. The general permit issued for such construction sites establishes conditions for maintenance of the sites to minimize pollution from storm water runoff, including requirements for installation and inspection of erosion controls. Also, the general permit imposes more stringent inspection, design criteria, sediment control measures, and self-monitoring requirements on sites in the watershed of streams that are already impaired due to sedimentation or are considered high quality. Regardless of the size, no construction site is allowed to cause a condition of pollution.

Beginning in 2003, the state began requiring some municipalities to obtain coverage under a permit designed to address nonpoint runoff issues: the General NPDES Municipal Separate Storm Sewer System Permit, commonly known as MS4. This permit requires the holder to develop a comprehensive storm water management program, including the adoption of local regulatory ordinances, regular inspection of construction sites and other discharges into their storm sewers, and a variety of educational, mapping, and monitoring activities. The state audits and oversees these local MS4 programs. Due to the rural nature of much of the area, and lack of large high density population centers, the only portion of the Nolichucky Watershed in Tennessee currently covered by an active MS4 program is the city of Greeneville and special sections of Washington County.

Construction sites within a sediment-impaired watershed may also have higher priority for inspections by WPC personnel, and are likely to have enforcement actions for failure to control erosion.

6.3.B.i.b. From Channel and/or Bank Erosion. Many streams within the Nolichucky River Watershed suffer from varying degrees of stream bank erosion. When stream channels are altered, banks can become unstable and highly erodable. Heavy livestock traffic can also severely disturb banks. When large tracts of land are cleared of vegetation (especially trees) and replaced with impermeable surfaces like asphalt and rooftops, the large increases in the velocities and volumes of storm water runoff can also overwhelm channel and bank integrity because destabilized banks contribute to sediment loadings and to the loss of beneficial riparian vegetation.

Some improper agricultural practices and overzealous land development have demonstrated impact to the hydrology and morphology of stream channels in the Nolichucky watershed, to the extent that it has caused a use impairment at this time.

Unpermitted rock harvesting and channel dredging can also severely disturb stream banks. Destabilized banks contribute to sediment load, poor results in biological diversity, and to the loss of beneficial riparian vegetation to the stream. The historical removal of cobble and rock from stream channels has resulted in destabilization of stream channels and aggressive erosion of stream banks.

Several agencies such as the NRCS and TDA, as well as watershed citizen groups, are working to stabilize portions of stream banks using bioengineering and other techniques. Many of the affected streams, such as Hale Branch, Slop Creek, Lick Creek, Rock Creek and Big and Little Limestone Creeks, could benefit from these types of projects. Other methods or controls that might be necessary to address common problems are:

Voluntary activities

- Re-establish bank vegetation (Sartain Creek, Slop Creek, tributaries to Richland, Pigeon and Meadow Creeks).
- Establish off-channel watering areas for livestock by moving watering troughs and feeders back from stream banks (Hale Branch, Crider Creek, tributaries to Big Limestone and Little Limestone Creeks, and tributaries to Little Chucky Creek).
- Limit cattle access to streams and bank vegetation (Carter Branch, Cedar Creek, and tributaries to Sinking and Richland Creeks). NRCS implemented fencing projects on Meadow Creek, Little Meadow Creek, and Greg Branch.
- Evaluate ditch clearing and bank stabilization with management practices in that area.
- Establish a Nonpoint Source Workgroup, which can develop and encourage programs, such as marketable wetland plants, to help offset the costs associated with implementation of BMPs.
- Provide an area for demonstration of filtration systems and new silt-removing products.

Regulatory Strategies

- Increase efforts in the Master Logger program to recognize impaired streams and require more effective management practices. (Pyborn Creek)
- Require post-construction run-off rates to be no greater than pre-construction rates in order to avoid in-channel erosion. (Holley, College, Frank, and Moon Creeks)
- Implement additional restrictions on logging in streamside management zones. (Rocky Fork and others – Unicoi County)
- Limit road and utility crossings of streams through better site design. (Little Limestone Creek)
- Restrict the use of off-highway vehicles on stream banks and in stream channels.
- Limit clearing of stream and roadside ditch banks or other alterations. (Tributaries to Lick and Richland Creeks) *Note: Permits may be required for any work along streams.*
- Encourage or require strong local buffer ordinances. (Little Limestone Creek)
- Restrict rock harvesting and sand removal to permitted sites. (Nolichucky River)

Additional strategies

- Better community planning and MS4 oversight for the impacts of development on small streams, especially development in growing areas such as around Holley, Pigeon and Big and Little Limestone Creeks.

6.3.B.i.c. From Agriculture and Silviculture. The Water Quality Control Act exempts normal agricultural and silvicultural practices that do not result in a point source discharge. Nevertheless, efforts are being made to address impacts due to these exempted practices.

The Master Logger Program has been in place for several years to train loggers how to install Best Management Practices that lessen the impact of logging activities on streams. Recently, laws and regulations established the authority for the Commissioners of the Departments of Environment and Conservation and of Agriculture to stop the logging operation that, upon failing to install these BMPs, is causing impacts to streams.

Since the Dust Bowl era, the agriculture community has strived to protect the soil from wind and water erosion. Agencies such as the Natural resources Conservation Service (NRCS), the University of Tennessee Agricultural Extension Service, and the Tennessee Department of Agriculture are striving to identify better ways of farming, to educate the farmers, and to install the methods that address the sources of some of the impacts due to agriculture. Cost sharing is available for many of these measures.

Many sediment problems traceable to agricultural practices also involve riparian loss due to close row cropping or pasture clearing for grazing. Lack of any type of vegetated buffer along stream corridors is a major problem throughout the Nolichucky River Watershed. Impacted streams that could benefit from the establishment of riparian buffer zones include Carter Branch, Slop Creek, Crider Creek, Meadow Creek, Pigeon Creek, Richland Creek, North Indian Creek, and Big and Little Limestone Creeks.

6.3.B.i.d. From Point Sources. Several permitted discharges within the Nolichucky River Watershed, including Little Limestone Creek, Richland Creek, and Lick Creek, discharge

suspended solids under the conditions of an NPDES permit and are reviewed during the watershed cycle for reissuance. A few will have limits on settleable solids. Those facilities with solids restrictions are WWTPs and package plants located in Jonesborough, Greeneville, and Mosheim, and numerous facilities such as Aerojet, and Nuclear Fuels.

6.3.B.1e. Pathogen Contamination.

Possible sources of pathogens are inadequate or failing septic tank systems, overflows or breaks in public sewer collection systems, poorly disinfected discharges from sewage treatment plants, and fecal matter from pets, livestock and wildlife which are washed into streams and storm drains. When fecal bacterial levels are shown to be consistently elevated to dangerously high levels, especially in streams with high potential for recreational uses, the division must post signage along the creek, warning the public to avoid contact. Once pathogen sources have been identified and corrected, and pathogen level reductions are documented, the posting is lifted.

Permits issued by the Division of Water Pollution Control regulate discharges from point sources and require adequate control for these sources. Individual homes are required to have subsurface, on-site treatment (i.e., septic tank and field lines), if public sewers are not available. The Division of Ground Water Protection within the Johnson City and Knoxville Environmental Field Offices and delegated county health departments regulate septic tanks and field lines. In addition to discharges to surface waters, businesses may employ either subsurface or surface disposal of wastewater. The Division of Water Pollution Control regulates surface water disposal.

Currently, twenty stream systems in the Nolichucky River Watershed are known to have excessive pathogen contamination including Big Limestone Creek, Blackley Creek, Carson Creek, Cedar Creek, Clear Creek, Horse Fork, Jockey Creek, Lick Creek, Little Limestone Creek, Mink Creek, Muddy Creek, Potter Creek, Richland Creek, and Sinking Creek. Little Limestone Creek, Lick Creek, and Richland Creeks are impacted by urban areas, with contributions of bacterial contamination coming from storm water runoff, sewage collection system leaks, and treatment plant operation failures. The division is not aware of any current plans for upgrades at the local WWTPs in this watershed.

Many streams in agricultural watersheds show elevated bacterial levels, including Flat Creek, Meadow Creek, Mud Creek, Bent Creek, Little Limestone Creek, Big Limestone Creek, Pigeon Creek, Richland Creek, and Long Creek. Lick Creek, Meadow Creek, Gap Creek, Little Chucky Creek, Pyborn Creek, and Nolichucky River may also have pathogen contributions from Concentrated Animal Feeding Operations (CAFOs).

Other measures that may be necessary to control pathogens are:

Voluntary activities

- Clean up pet waste.
- Repair failed septic systems.
- Establish off-channel watering areas for livestock by moving watering troughs and feeders back from stream banks (Hale Branch, Crider Creek, tributaries to Big Limestone and Little Limestone Creeks, and tributaries to Little Chucky Creek).
- Limit cattle access to streams and bank vegetation (Carter Branch, Cedar Creek, and tributaries to Sinking and Richland Creeks). NRCS has implemented fencing projects on Meadow Creek, Little Meadow Creek, and Greg Branch.
- Improve and educate on the proper management of animal waste from feeding operations.
- Work with the local watershed alliance group. Upper and Middle Nolichucky Watershed Alliances have conducted chemical and biological surveys to raise public awareness and to determine areas to designate projects.
- Attend training opportunities such as the EPA Watershed Academy.

Regulatory strategies

- Strengthen enforcement of regulations governing on-site wastewater treatment.
- Determine timely and appropriate enforcement for non-complying sewage treatment plants, large and small, and their collection systems.
- Identify Concentrated Animal Feeding Operations not currently permitted, particularly in the area of Pyborn Creek.

Additional strategies

- Develop intensive planning in areas where sewer is not available and treatment by subsurface disposal is not an option due to poor soils, floodplains, or high water tables.
- Develop and enforce leash laws and controls on pet fecal material (Richland Creek and Little Limestone Creek).
- Greater efforts by sewer utilities to identify leaking lines or overflowing manholes (Richland, Little Limestone, and Lick Creeks).
- Review the pathogen limits in discharge permits to determine the need for further restriction (Little Limestone Creek).
- Publish results of the Department of Agriculture's report on BMP's installed and the pre and post results of the effectiveness.
- Evaluate the possibility of establishing a project, similar to the Toe River Straight Pipe Elimination Grant, which assists certain individual households with septic system conditions within 500 feet of surface waters.

6.3.B.iii. Excessive Nutrients and/or Dissolved Oxygen Depletion.

These two impacts are usually listed together because high nutrients often contribute to low dissolved oxygen within a stream. Since nutrients often have the same source as pathogens, the measures previously listed can also address many of these problems. Elevated nutrient loadings are also often associated with urban runoff from impervious surfaces, from fertilized lawns and croplands, and faulty sewage disposal processes. Nutrients are often transported with sediment, so many of the measures designed to reduce sediment runoff will also aid in preventing organic enrichment of streams and lakes.

Dissolved oxygen depletion can also be due to the discharge of other biodegradable materials. These are limited in NPDES permits as ammonia and as either Biological Oxygen Demand (BOD) or Carbonaceous Oxygen Demand (CBOD).

Other sources of nutrients can be addressed by:

Voluntary activities

- Educate homeowners and lawn care companies in the proper application of fertilizers.
- Many streams in the Nolichucky River Watershed within agricultural areas would benefit from additional riparian buffers.
- Use grassed drainage ways that can remove fertilizer and sediment before it enters streams.
- Use native plants for landscaping since they don't require as much fertilizer and water.
- Develop better overall storm water management in urban and residential areas, including retrofitting existing commercial lots, homes, and roadways with storm water quality and quantity BMPs. This would especially improve the urban streams and lakes currently polluted by excessive nutrient and sediment inputs, such as Richland Creek, Rock Creek, Spring Creek and Little Limestone Creeks).

Physical changes to streams can prevent them from providing enough oxygen to biodegrade the materials that are naturally present. A few additional actions can address this problem:

- Maintain shade over a stream. Cooler water can hold more oxygen and retard the growth of algae. As a general rule, all stream channels suffer from some canopy removal. An intact riparian zone also acts as a buffer to filter out nutrient loads before they enter the water.
- Discourage impoundments and instead encourage filtration basins/constructed wetlands. Ponds and lakes do not aerate water. *Note: Permits may be required for any work on a stream, including impoundments.*

Regulatory strategies.

- Strengthen enforcement of regulations governing on-site wastewater treatment.
- Impose more stringent permit limits for nutrients discharged from sewage treatment plants including Little Limestone and Lick Creeks.

- Impose timely and appropriate enforcement for noncomplying sewage treatment plants, large and small, and their collection system including Little Limestone and Lick Creeks.
- Identify Concentrated Animal Feeding Operations not currently permitted.
- Identify any Animal Feeding Operations (AFO) that contribute to stream impacts and declare them as a CAFO requiring a permit (Lick Creek).
- Support and train local MS4 programs within municipalities, such as Greeneville, to deal with storm water pollution issues and require additional storm runoff quality control measures.
- Require nutrient management plans for all golf courses including Graysburg Hills, Andrew Johnson, Twin Creeks, and Link Hills.

Additional Strategies

- Encourage TDA and NRCS sponsored educational programs, which target agricultural landowners and aim at better nutrient management, as well as supplying information on technology-based application tools.

6.3.B.iv. Toxins and Other Materials.

Although some toxic substances are discharged directly into waters of the state from a point source, much of these materials are washed in during rainfalls from an upland location, or via improper waste disposal that contaminates groundwater. No streams are currently listed as impaired from these kinds of sources in the Nolichucky River Watershed toxins in storm water runoff from industrial facilities or urban areas damage a relatively small number of streams. More stringent inspection and regulation of permitted industrial facilities, and local storm water quality initiatives and regulations, could help reduce the amount of contaminated runoff reaching state waters. Examples of streams that would benefit from these measures are Richland, Holley, Little Limestone, and North Indian Creeks.

Individuals may also cause contaminants to enter streams by activities that may be attributed to apathy or the lack of knowledge or civility. Litter in roadside ditches, garbage bags tossed over bridge railings, paint brushes washed off over storm drains, and oil drained into ditches are all blatant examples of pollution in streams. Misapplication of chemicals on agricultural and suburban areas is another source of toxins and its impacts are observed in the Nolichucky River.

Some of these problems can be addressed by:

Voluntary activities

- Provide public education, involving municipalities/watershed groups.
- Paint warnings on storm drains that connect to a stream.
- Sponsor community clean-up days.
- Landscape public areas.
- Encourage public surveillance of their streams and reporting of dumping activities to their local authorities.

Regulatory strategies

- Continue to prohibit illicit discharges to storm drains and to search for the sources.
- Strengthen litter law enforcement at the local level.
- Increase the restrictions on storm water runoff from industrial facilities.
- Implement BMP strategies for nutrient and chemical management, such as the North Toe River Christmas BMP Demonstration project, that help to control the impacts of the storm water runoff from these types of areas.

Additional Strategies

- Return wetlands, or some man-made instrument acting like a wetland, to the hydrologic design of the stream, which will slow flows and remove harmful side effects of urbanization.

6.3.B.v. Habitat Alteration.

The alteration of the habitat within a stream can have severe consequences. Whether it is the removal of the vegetation, providing a root system network for holding soil particles together, the release of sediment which increases the bed load and covers benthic life and fish eggs, the removal of gravel bars, “cleaning out” creeks with heavy equipment, or the impounding of the water in ponds and lakes, many alterations impair the use of the stream for designated uses. Habitat alteration also includes the draining or filling of wetlands.

Many streams within the Nolichucky River Watershed suffer from some degree of habitat alteration, especially riparian loss and bank disturbances from agricultural practices. Some notable streams in the watershed that have suffered significant harm from being impounded include Hominy Creek and Big and Little Limestone Creeks.

Illicit gravel dredging is a particularly widespread and serious problem in the Nolichucky River Watershed due to the abundance of gravel substrate in streams in this area and their relative remoteness. “Wildcat” dredgers can do a devastating amount of damage to a localized area, then pack up and leave within a short period of time, making enforcement difficult. Streams affected by chronically recurring dredging operations include Rock Creek.

Although large-scale public projects such as highway construction can alter significant portions of streams, individual landowners and developers are responsible for the vast majority of stream alterations. Some measures that can help address these problems are:

Voluntary activities

- Sponsor litter pickup days to remove litter that might enter streams.
- Organize stream cleanups removing trash, limbs and debris before they cause blockage.
- Avoid use of heavy equipment to “clean out” streams. *Instream work other than debris removal will require an Aquatic Resource Alteration Permit (ARAP).*

- Plant native vegetation along streams to stabilize banks and provide habitat.
- Encourage developers to avoid extensive use of culverts in streams.

Regulatory Strategies

- Restrict modification of streams by means such as culverting, lining, or impounding.
- Require mitigation for impacts to streams and wetlands when modifications are allowed.
- Require permitting of all rock harvesting operations.
- Increased enforcement may be needed when violations of current regulations occur, especially for illicit gravel dredging.

Additional Enforcement

- Increased enforcement may be needed when violations of current regulations occur.

6.3.B.vi. Storm Water.

MS4 discharges are regulated through the Phase I or II NPDES-MS4 permits. These permits require the development and implementation of a Storm Water Management Program (SWMP) that will reduce the discharge of pollutants to the maximum extent practicable and not cause or contribute to violations of state water quality standards. The NPDES General Permit for Discharges from Phase I and II MSF facilities can be found at:

<http://www.state.tn.us/environment/wpc/stormh2o/>.

For discharges into impaired waters, the MS4 General Permit requires that SWMPs include a section describing how discharges of pollutants of concern will be controlled to ensure that they do not cause or contribute to instream exceedences of water quality standards. Specific measurements and BMPs to control pollutants of concern must also be identified. In addition, MS4s must implement the proposed waste load allocation provisions of an applicable TMDL (i.e., siltation/habitat alteration, pathogens) and describe methods to evaluate whether storm water controls are adequate to meet the waste load allocation. In order to evaluate SWMP effectiveness and demonstrate compliance with specified waste load allocations, MS4s are encouraged to develop and implement appropriate monitoring programs by the designated date.

Some storm sewer discharges are not regulated through the NPDES MS4 program. Strategies to address runoff in these urban areas include adapting Tennessee Growth Readiness Program (TGRP) educational materials to the watershed. TGRP is a statewide program built on existing best management practices from the Nonpoint Education for Municipal Officials program and the Center for Watershed Protection. TGRP developed the program to provide communities and counties with tools to design economically viable and watershed friendly developments. The program assists community leaders in reviewing current land use practices, determining impacts of imperviousness on watershed functions, and allowing them to understand the economics of good watershed management and site design.

6.4. PERMIT REISSUANCE PLANNING

Under the *Tennessee Water Quality Control Act*, municipal, industrial and other dischargers of wastewater must obtain a permit from the Division. Approximately 1,700 permits have been issued in Tennessee under the federally delegated National Pollutant Discharge Elimination System (NPDES). These permits establish pollution control and monitoring requirements based on protection of designated uses through implementation of water quality standards and other applicable state and federal rules.

The following three sections provide specific information on municipal, industrial, and water treatment plant active permit holders in the Nolichucky River Watershed. Compliance information was obtained from EPA's Permit Compliance System (PCS). All data was queried for a five-year period between January 1, 2001 and December 31, 2006. PCS can be accessed publicly through EPA's Envirofacts website. This website provides access to several EPA databases to provide the public with information about environmental activities that may affect air, water, and land anywhere in the United States:

http://www.epa.gov/enviro/html/ef_overview.html

Stream Segment information, including designated uses and impairments, are described in detail in Chapter 3, *Water Quality Assessment of the Nolichucky River Watershed*.

6.4.A. Municipal Permits**TN0021229 Denzil Bowman Wastewater Treatment Plant (Greeneville STP)**

Discharger rating: Minor
City: Greeneville
County: Greene
EFO Name: Johnson City
Issuance Date: 1/01/06
Expiration Date: 11/29/10
Receiving Stream(s): Davy Crockett Reservoir at Nolichucky River mile 47.5
HUC-12: 080102030303
Effluent Summary: Treated municipal wastewater from Outfall 001
Treatment system: Activated sludge plant followed by final settling clarifiers with chlorination. Sludge is treated by digestion with mechanical aeration to centrifuge and disposed by land application.

PARAMETER	SEASON	LIMIT	UNITS	SAMPLE DESIGNATOR	MONITORING FREQUENCY	SAMPLE TYPE	MONITORING LOCATION
BOD % removal	All Year	40	Percent	DMin % Removal	Weekdays	Calculated	% Removal
BOD % removal	All Year	85	Percent	MAvg % Removal	Weekdays	Calculated	% Removal
BOD5	All Year	45	mg/L	DMax Conc	Weekdays	Composite	Effluent
BOD5	All Year		mg/L	DMax Conc	Weekdays	Composite	Influent (Raw Sewage)
BOD5	All Year	2335	lb/day	WAvg Load	Weekdays	Composite	Effluent
BOD5	All Year	30	mg/L	MAvg Conc	Weekdays	Composite	Effluent
BOD5	All Year	1752	lb/day	MAvg Load	Weekdays	Composite	Effluent
BOD5	All Year		mg/L	MAvg Conc	Weekdays	Composite	Influent (Raw Sewage)
BOD5	All Year	40	mg/L	WAvg Conc	Weekdays	Composite	Effluent
Bypass of Treatment (occurrences)	All Year		Occurrences/ Month	MAvg Load	Continuous	Visual	Wet Weather
D.O.	All Year	1	mg/L	DMin Conc	Weekdays	Grab	Effluent
E. coli	All Year	941	#/100mL	DMax Conc	Weekdays	Grab	Effluent
E. coli	All Year	126	#/100mL	MAvg Geo Mean	Weekdays	Grab	Effluent
Flow	All Year		MGD	DMax Load	Daily	Continuous	Effluent
Flow	All Year		MGD	MAvg Load	Daily	Continuous	Effluent
Flow	All Year		MGD	MAvg Load	Daily	Continuous	Influent (Raw Sewage)
Flow	All Year		MGD	DMax Load	Daily	Continuous	Influent (Raw Sewage)
IC25 7day Ceriodaphnia Dubia	All Year	3.7	Percent	DMin Conc	Continuous	Composite	Effluent
IC25 7day Fathead Minnows	All Year	3.7	Percent	DMin Conc	Continuous	Composite	Effluent
Overflow Use Occurrences	All Year		Occurrences/ Month	MAvg Load	Continuous	Visual	Wet Weather

Table 6-1a.

PARAMETER	SEASON	LIMIT	UNITS	SAMPLE DESIGNATOR	MONITORING FREQUENCY	SAMPLE TYPE	MONITORING LOCATION
Overflow Use Occurences	All Year		Occurences/ Month	MAvg Load	Continuous	Visual	Non Wet Weather
Settleable Solids	All Year	1	mL/L	DMax Conc	Weekdays	Composite	Effluent
TRC	All Year	0.52	mg/L	DMax Conc	Weekdays	Instantaneous	Effluent
TSS	All Year	45	mg/L	DMax Conc	Weekdays	Composite	Effluent
TSS	All Year	1752	lb/day	MAvg Load	Weekdays	Composite	Effluent
TSS	All Year		mg/L	DMax Conc	Weekdays	Composite	Influent (Raw Sewage)
TSS	All Year	2335	lb/day	WAvg Load	Weekdays	Composite	Effluent
TSS	All Year	40	mg/L	WAvg Conc	Weekdays	Composite	Effluent
TSS	All Year		mg/L	MAvg Conc	Weekdays	Composite	Influent (Raw Sewage)
TSS	All Year	30	mg/L	MAvg Conc	Weekdays	Composite	Effluent
TSS % Removal	All Year	40	Percent	DMin % Removal	Weekdays	Calculated	% Removal
TSS % Removal	All Year	85	Percent	MAvg % Removal	Weekdays	Calculated	% Removal
pH	All Year	9	SU	DMax Conc	Weekdays	Grab	Effluent
pH	All Year	6	SU	DMin Conc	Weekdays	Grab	Effluent

Table 6-1b.

Tables 6-1a-b. Permit Limits for Denzil Bowman Wastewater Treatment Plant (Greeneville STP).

Compliance History:

The following numbers of exceedences were noted in PCS:

- 118 Overflows

Comments:

Possible plans for an additional digester, no plans for treatment capacity is known; they are normally operating at about ½ capacity, generally good compliance.

Compliance Evaluation Inspection March 27, 2007: E. Coli discrepancies bring the reliability of the facility self-monitoring results into question. The discrepancies are of particular concern because the results obtained at the Denzil Bowman WWTP appear to be consistently low when compared to those obtained by the TDH laboratory. Several pump issues and lab reporting issues were noted and detailed in a letter to Greeneville Water Commission.

December 6, 2007 letter to Greeneville Water Commission: Since collection system rehabilitation efforts to date appear to have eliminated much of the previously existing I/I problems in the Frank Creek #1 system as evidenced by submitted flow data. The pump station has been replaced with one of greater capacity and apparently sufficient to meet current and projected future demands, and no overflows have been reported in the past several months despite occurrence of some heavy rainfalls. The division agrees to elimination of the existing moratorium on new connections within this portion of the Greeneville sewer collection system.

TN0040673 Nolichucky Elementary School

Discharger rating: Minor
City: Greeneville
County: Greene
EFO Name: Johnson City
Issuance Date: 6/30/06
Expiration Date: 9/29/10
Receiving Stream(s): Meadow Creek at mile 2.9
HUC-12: 080102030303
Effluent Summary: Treated domestic wastewater from Outfall 001
Treatment system: Extended aeration

Segment	TN06010108007_1000
Name	Meadow Creek
Size	23.4
Unit	Miles
First Year on 303(d) List	2004
Uses	Fish and Aquatic Life (Supporting), Recreation (Non-Supporting), Irrigation (Supporting), Livestock Watering and Wildlife (Supporting)
Causes	Escherichia coli
Sources	Unrestricted Cattle Access

Table 6-2. Stream Segment Information for Nolichucky Elementary School

PARAMETER	SEASON	LIMIT	UNITS	SAMPLE DESIGNATOR	MONITORING FREQUENCY	SAMPLE TYPE	MONITORING LOCATION
BOD5	All Year	45	mg/L	DMax Conc	2/Month	Grab	Effluent
BOD5	All Year	30	mg/L	MAvg Conc	2/Month	Grab	Effluent
D.O.	All Year	1	mg/L	DMin Conc	Weekdays	Grab	Effluent
E. coli	All Year	126	#/100mL	MAvg Geo Mean	2/Month	Grab	Effluent
E. coli	All Year	941	#/100mL	MAvg Ari Mean	2/Month	Grab	Effluent
Flow	All Year		MGD	MAvg Load	Weekdays	Instantaneous	Effluent
Flow	All Year		MGD	DMax Load	Weekdays	Instantaneous	Effluent
Settleable Solids	All Year	1	mL/L	DMax Conc	2/Week	Grab	Effluent
TRC	All Year	1	mg/L	DMax Conc	Weekdays	Grab	Effluent
TSS	All Year	45	mg/L	DMax Conc	2/Month	Grab	Effluent
TSS	All Year	30	mg/L	MAvg Conc	2/Month	Grab	Effluent
pH	All Year	9	SU	DMax Conc	2/Week	Grab	Effluent
pH	All Year	6	SU	DMin Conc	2/Week	Grab	Effluent

Table 6-3. Permit Limits for Nolichucky Elementary School**Comments:**

None

TN0057371 TDEC Davy Crockett's Birthplace

Discharger rating: Minor
City: Limestone
County: Greene
EFO Name: Johnson City
Issuance Date: 1/01/06
Expiration Date: 11/29/10
Receiving Stream(s): Nolichucky River at mile 68.3
HUC-12: 080102030303
Effluent Summary: Treated domestic wastewater from Outfall 001
Treatment system: Extended aeration

Segment	TN06010108010_2000
Name	Nolichucky River
Size	6.5
Unit	Miles
First Year on 303(d) List	1990
Designated Uses	Domestic Water Supply (Supporting), Livestock Watering and Wildlife (Supporting), Irrigation (Supporting), Recreation (Supporting), Industrial Water Supply (Supporting), Fish and Aquatic Life (Non-Supporting)
Causes	Sedimentation/Siltation
Sources	Grazing in Riparian or Shoreline Zones, Sources Outside State Jurisdiction or Borders

Table 6-4. Stream Segment Information for TDEC Davy Crockett's Birthplace.

PARAMETER	SEASON	LIMIT	UNITS	SAMPLE DESIGNATOR	MONITORING FREQUENCY	SAMPLE TYPE	MONITORING LOCATION
BOD5	All Year	45	mg/L	DMax Conc	2/Month	Grab	Effluent
BOD5	All Year	30	mg/L	MAvg Conc	2/Month	Grab	Effluent
D.O.	All Year	1	mg/L	DMin Conc	Weekdays	Grab	Effluent
Fecal Coliform	All Year	1000	#/100mL	DMax Conc	2/Month	Grab	Effluent
Settleable Solids	All Year	1	mL/L	DMax Conc	2/Week	Grab	Effluent
TRC	All Year	2	mg/L	DMax Conc	Weekdays	Grab	Effluent
TSS	All Year	45	mg/L	DMax Conc	2/Month	Grab	Effluent
TSS	All Year	30	mg/L	MAvg Conc	2/Month	Grab	Effluent
pH	All Year	9	SU	DMax Conc	2/Week	Grab	Effluent
pH	All Year	6	SU	DMin Conc	2/Week	Grab	Effluent

Table 6-5. Permit Limits for TDEC Davy Crockett's Birthplace.**Comments:**

None

TN0057266 Suburban Terrace Apartments & Restaurant

Discharger rating: Minor
City: Greeneville
County: Greene
EFO Name: Johnson City
Issuance Date: 1/1/05
Expiration Date: 11/30/05
Receiving Stream(s): Moon Creek at mile 2.8
HUC-12: 080102030303
Effluent Summary: Treated domestic wastewater from Outfall 001
Treatment system: WAS to waste hauler to Greeneville WWTP

PARAMETER	SEASON	LIMIT	UNITS	SAMPLE DESIGNATOR	MONITORING FREQUENCY	SAMPLE TYPE	MONITORING LOCATION
Ammonia as N (Total)	All Year	10	mg/L	DMax Conc	Monthly	Grab	Effluent
Ammonia as N (Total)	All Year	5	mg/L	MAvg Conc	Monthly	Grab	Effluent
CBOD5	All Year	40	mg/L	DMax Conc	Monthly	Grab	Effluent
CBOD5	All Year	25	mg/L	MAvg Conc	Monthly	Grab	Effluent
D.O.	All Year	6	mg/L	DMin Conc	Weekdays	Grab	Effluent
Fecal Coliform	All Year	1000	#/100mL	DMax Conc	Monthly	Grab	Effluent
Fecal Coliform	All Year	200	#/100mL	MAvg Geo Mean	Monthly	Grab	Effluent
Settleable Solids	All Year	1	mL/L	DMax Conc	2/Week	Grab	Effluent
TRC	All Year	0.5	mg/L	DMax Conc	Weekdays	Grab	Effluent
TSS	All Year	45	mg/L	DMax Conc	Monthly	Grab	Effluent
TSS	All Year	30	mg/L	MAvg Conc	Monthly	Grab	Effluent
pH	All Year	8.5	SU	DMax Conc	2/Week	Grab	Effluent
pH	All Year	6.5	SU	DMin Conc	2/Week	Grab	Effluent

Table 6-6. Permit Limits for Suburban Terrace Apartments & Restaurant.

Enforcement:

Notice of Violation on 2/21/06 for late application.

Second Notice of Violation on 10/31/06 for late application.

Comments:

Permit expired, Notice of Violation sent from Nashville for failure to reapply, no certified operator at present.

TN0058301 South Greene High School

Discharger rating: Minor
City: Greeneville
County: Greene
EFO Name: Johnson City
Issuance Date: 7/01/06
Expiration Date: 12/31/10
Receiving Stream(s): Cove Creek at mile 3.5
HUC-12: 080102030303
Effluent Summary: Treated domestic wastewater from Outfall 001
Treatment system: Extended aeration

Segment	TN06010108009_1000
Name	Cove Creek
Size	29.7
Unit	Miles
First Year on 303(d) List	2002
Designated Uses	Recreation (Not Assessed), Irrigation (Supporting), Fish and Aquatic Life (Non-Supporting), Livestock Watering and Wildlife (Supporting)
Causes	Sedimentation/Siltation
Sources	Grazing in Riparian or Shoreline Zones

Table 6-7. Stream Segment Information for South Greene High School.

PARAMETER	SEASON	LIMIT	UNITS	SAMPLE DESIGNATOR	MONITORING FREQUENCY	SAMPLE TYPE	MONITORING LOCATION
BOD5	All Year	30	mg/L	MAvg Conc	2/Month	Grab	Effluent
BOD5	All Year	45	mg/L	DMax Conc	2/Month	Grab	Effluent
D.O.	All Year	1	mg/L	DMin Conc	Weekdays	Grab	Effluent
E. coli	All Year	126	#/100mL	MAvg Geo Mean	2/Month	Grab	Effluent
E. coli	All Year	941	#/100mL	MAvg Ari Mean	2/Month	Grab	Effluent
Flow	All Year		MGD	MAvg Load	Weekdays	Instantaneous	Effluent
Flow	All Year		MGD	DMax Load	Weekdays	Instantaneous	Effluent
Settleable Solids	All Year	1	mL/L	DMax Conc	2/Week	Grab	Effluent
TRC	All Year	1.5	mg/L	DMax Conc	Weekdays	Grab	Effluent
TSS	All Year	30	mg/L	MAvg Conc	2/Month	Grab	Effluent
TSS	All Year	45	mg/L	DMax Conc	2/Month	Grab	Effluent
pH	All Year	6	SU	DMin Conc	2/Week	Grab	Effluent
pH	All Year	9	SU	DMax Conc	2/Week	Grab	Effluent

Table 6-8. Permit Limits for South Greene High School.**Comments:**

None

TN0058343 Ottway Elementary School

Discharger rating: Minor
City: Greeneville
County: Greene
EFO Name: Johnson City
Issuance Date: 1/01/06
Expiration Date: 6/30/10
Receiving Stream(s): Lick Creek at mile 41.1
HUC-12: 080102030303
Effluent Summary: Treated domestic wastewater from Outfall 001
Treatment system: Extended aeration

Segment	TN06010108035_6000
Name	Lick Creek
Size	8.9
Unit	Miles
First Year on 303(d) List	2004
Designated Uses	Industrial Water Supply (Supporting), Livestock Watering and Wildlife (Supporting), Irrigation (Supporting), Recreation (Non-Supporting), Domestic Water Supply (Supporting), Fish and Aquatic Life (Non-Supporting)
Causes	Sedimentation/Siltation, Escherichia coli, Physical substrate habitat alterations, Nitrates
Sources	Grazing in Riparian or Shoreline Zones

Table 6-9. Stream Segment Information for Ottway Elementary School.

PARAMETER	SEASON	LIMIT	UNITS	SAMPLE DESIGNATOR	MONITORING FREQUENCY	SAMPLE TYPE	MONITORING LOCATION
BOD5	All Year	45	mg/L	DMax Conc	Monthly	Grab	Effluent
BOD5	All Year	30	mg/L	MAvg Conc	Monthly	Grab	Effluent
D.O.	All Year	4	mg/L	DMin Conc	Weekdays	Grab	Effluent
E. coli	All Year	126	#/100mL	MAvg Geo Mean	Monthly	Grab	Effluent
E. coli	All Year	940	#/100mL	MAvg Ari Mean	Monthly	Grab	Effluent
Flow	All Year		MGD	DMax Load			Effluent
Flow	All Year		MGD	MAvg Load	Weekdays	Instantaneous	Effluent
Settleable Solids	All Year	1	mL/L	DMax Conc	2/Week	Grab	Effluent
TRC	All Year	2	mg/L	DMax Conc	Weekdays	Grab	Effluent
TSS	All Year	45	mg/L	DMax Conc	Monthly	Grab	Effluent
TSS	All Year	30	mg/L	MAvg Conc	Monthly	Grab	Effluent
pH	All Year	6	SU	DMin Conc	2/Week	Grab	Effluent
pH	All Year	9	SU	DMax Conc	2/Week	Grab	Effluent

Table 6-10. Permit Limits for Ottway Elementary School.**Comments:** None

TN0058271 Chuckey Elementary School

Discharger rating: Minor
City: Chuckey
County: Greene
EFO Name: Johnson City
Issuance Date: 6/01/06
Expiration Date: 9/30/10
Receiving Stream(s): Rheatown Creek at mile 0.9
HUC-12: 080102030303
Effluent Summary: Treated domestic wastewater from Outfall 001
Treatment system: Extended aeration

Segment	TN06010108010_0700
Name	Rheatown Creek
Size	3.1
Unit	Miles
First Year on 303(d) List	-
Designated Uses	Fish and Aquatic Life (Supporting), Recreation (Not Assessed), Irrigation (Supporting), Livestock Watering and Wildlife (Supporting)
Causes	N/A
Sources	N/A

Table 6-11. Stream Segment Information for Chuckey Elementary School.

PARAMETER	SEASON	LIMIT	UNITS	SAMPLE DESIGNATOR	MONITORING FREQUENCY	SAMPLE TYPE	MONITORING LOCATION
Ammonia as N (Total)	All Year	10	mg/L	DMax Conc	2/Month	Grab	Effluent
Ammonia as N (Total)	All Year	5	mg/L	MAvg Conc	2/Month	Grab	Effluent
BOD5	All Year	20	mg/L	DMax Conc	2/Month	Grab	Effluent
BOD5	All Year	10	mg/L	MAvg Conc	2/Month	Grab	Effluent
D.O.	All Year	6	mg/L	DMin Conc	Weekdays	Grab	Effluent
E. coli	All Year						Effluent
E. coli	All Year	126	#/100mL	MAvg Geo Mean	2/Month	Grab	Effluent
E. coli	All Year	941	#/100mL	MAvg Ari Mean	2/Month	Grab	Effluent
Flow	All Year		MGD	DMax Load	Weekdays	Instantaneous	Effluent
Flow	All Year		MGD	MAvg Load	Daily		Effluent
Settleable Solids	All Year	1	mL/L	DMax Conc	2/Week	Grab	Effluent
TRC	All Year	0.02	mg/L	DMax Conc	Weekdays	Grab	Effluent
TSS	All Year	45	mg/L	DMax Conc	2/Month	Grab	Effluent
TSS	All Year	20	mg/L	MAvg Conc	2/Month	Grab	Effluent
pH	All Year	9	SU	DMax Conc	2/Week	Grab	Effluent
pH	All Year	6.5	SU	DMin Conc	2/Week	Grab	Effluent

Table 6-12. Permit Limits for Chuckey Elementary School.**Enforcement:**

Notice of Violation on 2/21/06 for late application

Comments: None

TN0058254 McDonald Elementary School

Discharger rating: Minor
City: Mohawk
County: Greene
EFO Name: Johnson City
Issuance Date: 6/01/06
Expiration Date: 9/30/10
Receiving Stream(s): War Branch at mile 0.5 to Lick Creek
HUC-12: 080102030303
Effluent Summary: Treated municipal wastewater from Outfall 001
Treatment system: Extended aeration

PARAMETER	SEASON	LIMIT	UNITS	SAMPLE DESIGNATOR	MONITORING FREQUENCY	SAMPLE TYPE	MONITORING LOCATION
Ammonia as N (Total)	Summer	4	mg/L	DMax Conc	2/Month	Grab	Effluent
Ammonia as N (Total)	Summer	2	mg/L	MAvg Conc	2/Month	Grab	Effluent
Ammonia as N (Total)	Winter	10	mg/L	DMax Conc	2/Month	Grab	Effluent
Ammonia as N (Total)	Winter	5	mg/L	MAvg Conc	2/Month	Grab	Effluent
BOD5	All Year	20	mg/L	DMax Conc	2/Month	Grab	Effluent
BOD5	All Year	10	mg/L	MAvg Conc	2/Month	Grab	Effluent
D.O.	All Year	5	mg/L	DMin Conc	Weekdays	Grab	Effluent
E. coli	All Year	126	#/100mL	MAvg Geo Mean	2/Month	Grab	Effluent
E. coli	All Year	941	#/100mL	MAvg Ari Mean	2/Month	Grab	Effluent
Flow	All Year		MGD	MAvg Load	Weekdays	Instantaneous	Effluent
Flow	All Year		MGD	DMax Load	Weekdays	Instantaneous	Effluent
Settleable Solids	All Year	1	mL/L	DMax Conc	2/Week	Grab	Effluent
TRC	All Year	0.5	mg/L	DMax Conc	Weekdays	Grab	Effluent
TSS	All Year	45	mg/L	DMax Conc	2/Month	Grab	Effluent
TSS	All Year	30	mg/L	MAvg Conc	2/Month	Grab	Effluent
pH	All Year	9	SU	DMax Conc	2/Week	Grab	Effluent
pH	All Year	6.5	SU	DMin Conc	2/Week	Grab	Effluent

Table 6-13. Permit Limits for McDonald Elementary School.

Comments:

None

DRAFT**TN0059366 Lick Creek Valley (Mosheim) Wastewater Treatment Plant**

Discharger rating: Major
City: Midway
County: Greene
EFO Name: Johnson City
Issuance Date: 3/01/06
Expiration Date: 9/30/10
Receiving Stream(s): Lick Creek at mile 23.3
HUC-12: 080102030303
Effluent Summary: Treated municipal wastewater from Outfall 001
Treatment system: WAS to aerobic digester; some liquid to lap site; some drybed to lap

Segment	TN06010108035_5000
Name	Lick Creek
Size	17.8
Unit	Miles
First Year on 303(d) List	2004
Designated Uses	Industrial Water Supply (Supporting), Fish and Aquatic Life (Non-Supporting), Recreation (Non-Supporting), Irrigation (Supporting), Livestock Watering and Wildlife (Supporting)
Causes	Nitrates, Physical substrate habitat alterations, Sedimentation/Siltation, Escherichia coli
Sources	Grazing in Riparian or Shoreline Zones

Table 6-14. Stream Segment Information for Lick Creek Valley (Mosheim) Wastewater Treatment Plant.

PARAMETER	SEASON	LIMIT	UNITS	SAMPLE DESIGNATOR	MONITORING FREQUENCY	SAMPLE TYPE	MONITORING LOCATION
Ammonia as N (Total)	Summer	10	mg/L	DMax Conc	3/Week	Composite	Effluent
Ammonia as N (Total)	Summer	65	lb/day	WAvg Load	3/Week	Composite	Effluent
Ammonia as N (Total)	Summer	8	mg/L	WAvg Conc	3/Week	Composite	Effluent
Ammonia as N (Total)	Summer	41	lb/day	MAvg Load	3/Week	Composite	Effluent
Ammonia as N (Total)	Summer	5	mg/L	MAvg Conc	3/Week	Composite	Effluent
Ammonia as N (Total)	Winter	25	mg/L	DMax Conc	3/Week	Composite	Effluent
Ammonia as N (Total)	Winter	20	mg/L	WAvg Conc	3/Week	Composite	Effluent
Ammonia as N (Total)	Winter	163	lb/day	WAvg Load	3/Week	Composite	Effluent
Ammonia as N (Total)	Winter	15	mg/L	MAvg Conc	3/Week	Composite	Effluent
Ammonia as N (Total)	Winter	122	lb/day	MAvg Load	3/Week	Composite	Effluent
Bypass of Treatment (flow rate)	All Year		Occurrences/ Month	MAvg Load	Continuous	Visual	Wet Weather
CBOD % Removal	Summer	40	Percent	DMin % Removal	3/Week	Calculated	% Removal

Table 6-15a

PARAMETER	SEASON	LIMIT	UNITS	SAMPLE DESIGNATOR	MONITORING FREQUENCY	SAMPLE TYPE	MONITORING LOCATION
CBOD % Removal	Summer	85	Percent	MAvg % Removal	3/Week	Calculated	% Removal
CBOD % Removal	Winter	85	Percent	MAvg % Removal	3/Week	Calculated	% Removal
CBOD % Removal	Winter	40	Percent	DMin % Removal	3/Week	Calculated	% Removal
CBOD5	Summer	30	mg/L	DMax Conc	3/Week	Composite	Effluent
CBOD5	Summer		mg/L	DMax Conc	3/Week	Composite	Influent (Raw Sewage)
CBOD5	Summer	203	lb/day	WAvg Load	3/Week	Composite	Effluent
CBOD5	Summer	25	mg/L	WAvg Conc	3/Week	Composite	Effluent
CBOD5	Summer	20	mg/L	MAvg Conc	3/Week	Composite	Effluent
CBOD5	Summer	163	lb/day	MAvg Load	3/Week	Composite	Effluent
CBOD5	Summer		mg/L	MAvg Conc	3/Week	Composite	Influent (Raw Sewage)
CBOD5	Winter	40	mg/L	DMax Conc	3/Week	Composite	Effluent
CBOD5	Winter	25	mg/L	MAvg Conc	3/Week	Composite	Effluent
CBOD5	Winter	35	mg/L	WAvg Conc	3/Week	Composite	Effluent
CBOD5	Winter	285	lb/day	WAvg Load	3/Week	Composite	Effluent
CBOD5	Winter	203	lb/day	MAvg Load	3/Week	Composite	Effluent
CBOD5	Winter		mg/L	DMax Conc	3/Week	Composite	Influent (Raw Sewage)
CBOD5	Winter		mg/L	MAvg Conc	3/Week	Composite	Influent (Raw Sewage)
D.O.	All Year	6	mg/L	DMin Conc	Weekdays	Grab	Effluent
E. coli	All Year	941	#/100mL	DMax Conc	3/Week	Grab	Effluent
E. coli	All Year	126	#/100mL	MAvg Geo Mean	3/Week	Grab	Effluent
Flow	All Year		MGD	MAvg Load	Daily	Continuous	Influent (Raw Sewage)
Flow	All Year		MGD	MAvg Load	Daily	Continuous	Effluent
Flow	All Year		MGD	DMax Load	Daily	Continuous	Influent (Raw Sewage)
Flow	All Year		MGD	DMax Load	Daily	Continuous	Effluent
IC25 7day <i>Ceriodaphnia Dubia</i>	All Year	10.7	Percent	DMin Conc	Quarterly	Composite	Effluent
IC25 7day Fathead Minnows	All Year	10.7	Percent	DMin Conc	Quarterly	Composite	Effluent
Nitrogen Total (as N)	Summer	22	mg/L	DMax Conc	Weekly	Composite	Effluent
Nitrogen Total (as N)	Summer	116	lb/day	DMax Load	Weekly	Composite	Effluent
Nitrogen Total (as N)	Summer	19	mg/L	MAvg Conc	Weekly	Composite	Effluent
Nitrogen Total (as N)	Summer	100	lb/day	MAvg Load	Weekly	Composite	Effluent
Nitrogen Total (as N)	Winter	23	mg/L	DMax Conc	Weekly	Composite	Effluent
Nitrogen Total (as N)	Winter	121	lb/day	DMax Load	Weekly	Composite	Effluent
Nitrogen Total (as N)	Winter	20	mg/L	MAvg Conc	Weekly	Composite	Effluent
Nitrogen Total (as N)	Winter	104	lb/day	MAvg Load	Weekly	Composite	Effluent
Overflow Use Occurences	All Year		Occurences/Month	MAvg Load	Continuous	Visual	Wet Weather
Overflow Use Occurences	All Year		Occurences/Month	MAvg Load	Continuous	Visual	Non Wet Weather
Phosphorus Total	All Year	28	lb/day	MAvg Load	Weekly	Composite	Effluent
Phosphorus Total	All Year	5	mg/L	MAvg Conc	Weekly	Composite	Effluent
Phosphorus Total	All Year	6	mg/L	DMax Conc	Weekly	Composite	Effluent

Table 6-15b.

PARAMETER	SEASON	LIMIT	UNITS	SAMPLE DESIGNATOR	MONITORING FREQUENCY	SAMPLE TYPE	MONITORING LOCATION
Phosphorus Total	All Year	33	lb/day	DMax Load	Weekly	Composite	Effluent
Settleable Solids	All Year	1	mL/L	DMax Conc	Weekdays	Grab	Effluent
TRC	All Year	0.18	mg/L	DMax Conc	Weekdays	Grab	Effluent
TSS	All Year	25	mg/L	DMax Conc	3/Week	Composite	Effluent
TSS	All Year	122	lb/day	MAvg Load	3/Week	Composite	Effluent
TSS	All Year		mg/L	DMax Conc	3/Week	Composite	Influent (Raw Sewage)
TSS	All Year		mg/L	MAvg Conc	3/Week	Composite	Influent (Raw Sewage)
TSS	All Year	15	mg/L	MAvg Conc	3/Week	Composite	Effluent
TSS	All Year	163	lb/day	WAvg Load	3/Week	Composite	Effluent
TSS	All Year	20	mg/L	WAvg Conc	3/Week	Composite	Effluent
TSS % Removal	All Year	40	Percent	DMin % Removal	3/Week	Calculated	% Removal
TSS % Removal	All Year	85	Percent	MAvg % Removal	3/Week	Calculated	% Removal
pH	All Year	9	SU	DMax Conc	Weekdays	Grab	Effluent
pH	All Year	6.5	SU	DMin Conc	Weekdays	Grab	Effluent

Table 6-15c.**Tables 6-15a-c. Permit Limits for Lick Creek Valley (Mosheim) Wastewater Treatment Plant.****Compliance History:**

The following numbers of exceedences were noted in PCS:

- 15 Total Suspended Solids (TSS)
- 59 Total Nitrogen
- 5 Suspended Solids % Removal
- 4 Carbonaceous Biological Oxygen Demand (CBOD)
- 2 Total Chlorine
- 3 Carbonaceous Oxygen Demand (BOD)
- 1 Zinc
- 2 Dissolved Oxygen
- 41 Overflows
- 3 Bypasses

Enforcement:

June 15, 2007: Notice of Violation for failure to meet the sampling requirements of NPDES permit, for failure to perform all of the required compliance monitoring activities, for failure to enforce against interference, and for failure to take adequate and timely enforcement.

Comments: None

TN0063932 Baileyton STP

Discharger rating: Minor
City: Greeneville
County: Greene
EFO Name: Johnson City
Issuance Date: 3/01/06
Expiration Date: 9/30/10
Receiving Stream(s): Lick Creek at mile 49.2
HUC-12: 080102030303
Effluent Summary: Treated municipal wastewater from Outfall 001
Treatment system: WAS to aerobic digester to land application or to drybeds.

Segment	TN06010108035_7000
Name	Lick Creek
Size	9.4
Unit	Miles
First Year on 303(d) List	2004
Designated Uses	Domestic Water Supply (Supporting), Industrial Water Supply (Supporting), Fish and Aquatic Life (Non-Supporting), Recreation (Non-Supporting), Irrigation (Supporting), Livestock Watering and Wildlife (Supporting)
Causes	Nitrates, Physical substrate habitat alterations, Sedimentation/Siltation, Escherichia coli
Sources	Grazing in Riparian or Shoreline Zones

Table 6-16. Stream Segment Information for Baileyton STP.

PARAMETER	SEASON	LIMIT	UNITS	SAMPLE DESIGNATOR	MONITORING FREQUENCY	SAMPLE TYPE	MONITORING LOCATION
BOD % removal	All Year	40	Percent	DMin % Removal	Weekly	Calculated	% Removal
BOD % removal	All Year	85	Percent	MAvg % Removal	Weekly	Calculated	% Removal
BOD5	All Year		mg/L	MAvg Conc	Weekly	Composite	Influent (Raw Sewage)
BOD5	All Year		mg/L	DMax Conc	Weekly	Composite	Influent (Raw Sewage)
BOD5	All Year	45	mg/L	DMax Conc	Weekly	Composite	Effluent
BOD5	All Year	30	mg/L	MAvg Conc	Weekly	Composite	Effluent
BOD5	All Year	40	mg/L	WAvG Conc	Weekly	Composite	Effluent
BOD5	All Year	25	lb/day	MAvg Load	Weekly	Composite	Effluent
BOD5	All Year	33	lb/day	WAvG Load	Weekly	Composite	Effluent
Bypass of Treatment (occurrences)	All Year		Occurrence s/Month	MAvg Load	Continuous	Visual	Wet Weather
D.O.	All Year	5	mg/L	DMin Conc	Weekdays	Grab	Effluent
E. coli	All Year	941	#/100mL	DMax Conc	Weekly	Grab	Effluent
E. coli	All Year	126	#/100mL	MAvg Geo Mean	Weekly	Grab	Effluent
Flow	All Year		MGD	MAvg Load	Daily	Continuous	Effluent
Flow	All Year		MGD	MAvg Load	Daily	Continuous	Influent (Raw Sewage)
Flow	All Year		MGD	DMax Load	Daily	Continuous	Influent (Raw Sewage)
Flow	All Year		MGD	DMax Load	Daily	Continuous	Effluent
Nitrogen Total (as N)	All Year		mg/L	MAvg Conc	Monthly	Composite	Effluent
Nitrogen Total (as N)	All Year		mg/L	DMax Conc	Monthly	Composite	Effluent
Overflow Use Occurrences	All Year		Occurrence s/Month	MAvg Load	Continuous	Visual	Wet Weather
Overflow Use Occurrences	All Year		Occurrence s/Month	MAvg Load	Continuous	Visual	Non Wet Weather
Phosphorus Total	All Year		mg/L	DMax Conc	Monthly	Composite	Effluent
Phosphorus, Total	All Year		mg/L	MAvg Conc	Monthly	Composite	Effluent
Settleable Solids	All Year	1	mL/L	DMax Conc	Weekdays	Grab	Effluent
TRC	All Year	1.4	mg/L	DMax Conc	Weekdays	Grab	Effluent
TSS	All Year		mg/L	MAvg Conc	Weekly	Composite	Influent (Raw Sewage)
TSS	All Year		mg/L	DMax Conc	Weekly	Composite	Influent (Raw Sewage)
TSS	All Year	45	mg/L	DMax Conc	Weekly	Composite	Effluent
TSS	All Year	40	mg/L	WAvG Conc	Weekly	Composite	Effluent
TSS	All Year	25	lb/day	MAvg Load	Weekly	Composite	Effluent
TSS	All Year	30	mg/L	MAvg Conc	Weekly	Composite	Effluent
TSS	All Year	33	lb/day	WAvG Load	Weekly	Composite	Effluent
TSS % Removal	All Year	40	Percent	DMin % Removal	Weekly	Calculated	% Removal
TSS % Removal	All Year	85	Percent	MAvg % Removal	Weekly	Calculated	% Removal
pH	All Year	6	SU	DMin Conc	Weekdays	Grab	Effluent
pH	All Year	9	SU	DMax Conc	Weekdays	Grab	Effluent

Table 6-17. Permit Limits for Baileyton STP.

Compliance History:

The following numbers of exceedences were noted in PCS:

- 16 Biological Oxygen Demand (BOD)
- 6 Settleable Solids
- 5 Suspended Solids % Removal
- 9 Total Suspended Solids (TSS)
- 5 Dissolved Oxygen
- 1 Total Chlorine
- 2 Overflows

Comments:

None

TN0005053 TWRA - Erwin Fish Hatchery

Discharger rating: Minor
City: Erwin
County: Unicoi
EFO Name: Johnson City
Issuance Date: 7/01/05
Expiration Date: 5/31/10
Receiving Stream(s): Love Spring Creek at mile 0.5
HUC-12: 080102030303
Effluent Summary: Industrial wastewater (water from a fish farm operation) through Outfall 001
Treatment system: -

Segment	TN06010108010_1910
Name	Spring Creek
Size	1.7
Unit	Miles
First Year on 303(d) List	2004
Designated Uses	Fish and Aquatic Life (Non-Supporting), Recreation (Not Assessed), Irrigation (Supporting), Livestock Watering and Wildlife (Supporting)
Causes	Other anthropogenic substrate alterations
Sources	Discharges from Municipal Separate Storm Sewer Systems (MS4)

Table 6-18. Stream Segment Information for TWRA - Erwin Fish Hatchery.

PARAMETER	SEASON	LIMIT	UNITS	SAMPLE DESIGNATOR	MONITORING FREQUENCY	SAMPLE TYPE	MONITORING LOCATION
48hr LC50: <i>Ceriodaphnia Dubia</i>	All Year	100	Percent	DMin Conc	Annually	Grab	Effluent
48hr LC50: Fathead Minnows	All Year	100	Percent	DMin Conc	Annually	Grab	Effluent
D.O.	All Year	7	mg/L	DMin Conc	2/Month	Grab	Effluent
Flow	All Year		MGD	DMax Load	2/Month	Instantaneous	Effluent
Flow	All Year		MGD	MAvg Load	2/Month	Instantaneous	Effluent
Settleable Solids	All Year	0.5	mL/L	DMax Conc	Monthly	Grab	Effluent
TSS	All Year	15	mg/L	DMax Conc	Monthly	Grab	Effluent
pH	All Year	9	SU	DMax Conc	2/Month	Grab	Effluent
pH	All Year	6	SU	DMin Conc	2/Month	Grab	Effluent

Table 6-19. Permit Limits for TWRA - Erwin Fish Hatchery.**Comments:** None

TN0023001 Erwin STP

Discharger rating: Minor
City: Erwin
County: Unicoi
EFO Name: Johnson City
Issuance Date: 1/01/06
Expiration Date: 8/31/10
Receiving Stream(s): Nolichucky River at mile 94.4
HUC-12: 080102030303
Effluent Summary: Biologically treated municipal wastewater from Outfall 001
Treatment system: Screening and grit removal with mechanical screens, primary sedimentation, rotating biological contactors, secondary sedimentation, disinfection by chlorination

Segment	TN06010108010_2000
Name	Nolichucky River
Size	6.5
Unit	Miles
First Year on 303(d) List	1990
Designated Uses	Domestic Water Supply (Supporting), Livestock Watering and Wildlife (Supporting), Irrigation (Supporting), Recreation (Supporting), Industrial Water Supply (Supporting), Fish and Aquatic Life (Non-Supporting)
Causes	Sedimentation/Siltation
Sources	Grazing in Riparian or Shoreline Zones, Sources Outside State Jurisdiction or Borders

Table 6-20. Stream Segment Information for Erwin STP.

PARAMETER	SEASON	LIMIT	UNITS	SAMPLE DESIGNATOR	MONITORING FREQUENCY	SAMPLE TYPE	MONITORING LOCATION
48hr LC50: <i>Ceriodaphnia Dubia</i>	All Year	5	Percent	DMin Conc	Quarterly	Grab	Effluent
48hr LC50: Fathead Minnows	All Year	5	Percent	DMin Conc	Quarterly	Grab	Effluent
BOD % removal	All Year	40	Percent	DMin % Removal	3/Week	Calculated	% Removal
BOD % removal	All Year	85	Percent	MAvg % Removal	3/Week	Calculated	% Removal
BOD5	All Year	45	mg/L	DMax Conc	3/Week	Composite	Effluent
BOD5	All Year		mg/L	DMax Conc	3/Week	Composite	Influent (Raw Sewage)
BOD5	All Year	634	lb/day	WAvg Load	3/Week	Composite	Effluent
BOD5	All Year	40	mg/L	WAvg Conc	3/Week	Composite	Effluent
BOD5	All Year	475	lb/day	MAvg Load	3/Week	Composite	Effluent
BOD5	All Year		mg/L	MAvg Conc	3/Week	Composite	Influent (Raw Sewage)
BOD5	All Year	30	mg/L	MAvg Conc	3/Week	Composite	Effluent
Bypass of Treatment (occurrences)	All Year		Occurrences/ Month	MAvg Load	Continuous	Visual	Wet Weather
D.O.	All Year	3	mg/L	DMin Conc	Weekdays	Grab	Effluent
E. coli	All Year	941	#/100mL	DMax Conc	3/Week	Grab	Effluent
E. coli	All Year	126	#/100mL	MAvg Geo Mean	3/Week	Grab	Effluent
Flow	All Year		MGD	DMax Load	Daily	Continuous	Effluent
Flow	All Year		MGD	MAvg Load	Daily	Continuous	Effluent
Flow	All Year		MGD	MAvg Load	Daily	Continuous	Influent (Raw Sewage)
Flow	All Year		MGD	DMax Load	Daily	Continuous	Influent (Raw Sewage)
Overflow Use Occurences	All Year		Occurrences/ Month	MAvg Load	Continuous	Visual	Wet Weather
Overflow Use Occurences	All Year		Occurrences/ Month	MAvg Load	Continuous	Visual	Non Wet Weather
Settleable Solids	All Year	1	mL/L	DMax Conc	3/Week	Grab	Effluent
TRC	All Year	1.24	mg/L	DMax Conc	Weekdays	Grab	Effluent
TSS	All Year	45	mg/L	DMax Conc	3/Week	Composite	Effluent
TSS	All Year	475	lb/day	MAvg Load	3/Week	Composite	Effluent
TSS	All Year		mg/L	DMax Conc	3/Week	Composite	Influent (Raw Sewage)
TSS	All Year	634	lb/day	WAvg Load	3/Week	Composite	Effluent
TSS	All Year	30	mg/L	MAvg Conc	3/Week	Composite	Effluent
TSS	All Year		mg/L	MAvg Conc	3/Week	Composite	Influent (Raw Sewage)
TSS	All Year	40	mg/L	WAvg Conc	3/Week	Composite	Effluent
TSS % Removal	All Year	40	Percent	DMin % Removal	3/Week	Calculated	% Removal
TSS % Removal	All Year	85	Percent	MAvg % Removal	3/Week	Calculated	% Removal
pH	All Year	9	SU	DMax Conc	Weekdays	Grab	Effluent
pH	All Year	6.5	SU	DMin Conc	Weekdays	Grab	Effluent

Table 6-21. Permit Limits for Erwin STP.

Compliance History:

The following numbers of exceedences were noted in PCS:

- 20 Biological Oxygen Demand (BOD)
- 8 Escherichia coli
- 16 Bypasses

Comments:

4/11/07: Technical Assistance Visit and file review. In compliance.

TN0021547 Jonesborough STP

Discharger rating: Minor
City: Jonesborough
County: Washington
EFO Name: Johnson City
Issuance Date: 6/1/07
Expiration Date: 10/31/07
Receiving Stream(s): Big Limestone Creek at mile 12.5
HUC-12: 080102030303
Effluent Summary: Treated municipal wastewater from Outfall 001
Treatment system: WAS to aerobic digester to drybeds to land application site

Segment	TN06010108510_2000
Name	Little Limestone Creek
Size	13.5
Unit	Miles
First Year on 303(d) List	2004
Designated Uses	Livestock Watering and Wildlife (Supporting), Irrigation (Supporting), Fish and Aquatic Life (Non-Supporting), Recreation (Non-Supporting)
Causes	Physical substrate habitat alterations, Escherichia coli
Sources	Grazing in Riparian or Shoreline Zones

Table 6-22. Stream Segment Information for Jonesborough STP.

PARAMETER	SEASON	LIMIT	UNITS	SAMPLE DESIGNATOR	MONITORING FREQUENCY	SAMPLE TYPE	MONITORING LOCATION
Ammonia as N (Total)	Summer	4	mg/L	DMax Conc	3/Week	Composite	Effluent
Ammonia as N (Total)	Summer	12.5	lb/day	DMax Load	3/Week	Composite	Effluent
Ammonia as N (Total)	Summer	3	mg/L	MAvg Conc	3/Week	Composite	Effluent
Ammonia as N (Total)	Summer	2	mg/L	WAvg Conc	3/Week	Composite	Effluent
Ammonia as N (Total)	Summer	8.3	lb/day	MAvg Load	3/Week	Composite	Effluent
Ammonia as N (Total)	Winter	9	mg/L	DMax Conc	3/Week	Composite	Effluent
Ammonia as N (Total)	Winter	18.8	lb/day	MAvg Load	3/Week	Composite	Effluent
Ammonia as N (Total)	Winter	28.4	lb/day	DMax Load	3/Week	Composite	Effluent
Ammonia as N (Total)	Winter	4.5	mg/L	WAvg Conc	3/Week	Composite	Effluent
Ammonia as N (Total)	Winter	6.8	mg/L	MAvg Conc	3/Week	Composite	Effluent
CBOD % Removal	All Year	40	Percent	DMin % Removal	3/Week	Calculated	% Removal
CBOD % Removal	All Year	85	Percent	MAvg % Removal	3/Week	Calculated	% Removal
CBOD5	All Year	30	mg/L	DMax Conc	3/Week	Composite	Effluent
CBOD5	All Year	20	mg/L	DMin Conc	3/Week	Composite	Effluent
CBOD5	All Year	83	lb/day	MAvg Load	3/Week	Composite	Effluent
CBOD5	All Year	25	mg/L	MAvg Conc	3/Week	Composite	Effluent
CBOD5	All Year	104	lb/day	DMax Load	3/Week	Composite	Effluent
Cyanide, Total (CN-)	All Year	0.0078	mg/L	MAvg Conc	Semi-annually	Composite	Effluent
D.O.	All Year	6	mg/L	DMin Conc	Weekdays	Grab	Effluent
E. coli	All Year	126	#/100mL	MAvg Geo Mean	3/Week	Grab	Effluent
Fecal Coliform	All Year	1000	#/100mL	DMax Conc	3/Week	Grab	Effluent
Fecal Coliform	All Year	200	#/100mL	MAvg Geo Mean	3/Week	Grab	Effluent
Hg (T)	All Year	0.0002	mg/L	MAvg Conc	Semi-annually	Composite	Effluent
IC25 7day Ceriodaphnia Dubia	All Year	68.5	Percent	DMin Conc	Quarterly	Composite	Effluent
IC25 7day Fathead Minnows	All Year	68.5	Percent	DMin Conc	Quarterly	Composite	Effluent
Pb (T)	All Year	0.0438	mg/L	MAvg Conc	Semi-annually	Composite	Effluent
Settleable Solids	All Year	1	mL/L	DMax Conc	Weekdays	Composite	Effluent
TRC	All Year	0.05	mg/L	DMax Conc	Weekdays	Grab	Effluent
TSS	All Year	45	mg/L	DMax Conc	3/Week	Composite	Effluent
TSS	All Year	167	lb/day	DMax Load	3/Week	Composite	Effluent
TSS	All Year	30	mg/L	WAvg Conc	3/Week	Composite	Effluent
TSS	All Year	125	lb/day	MAvg Load	3/Week	Composite	Effluent
TSS	All Year	40	mg/L	MAvg Conc	3/Week	Composite	Effluent
TSS % Removal	All Year	40	Percent	DMin % Removal	3/Week	Calculated	% Removal
TSS % Removal	All Year	85	Percent	MAvg % Removal	3/Week	Calculated	% Removal
pH	All Year	9	SU	DMax Conc	Weekdays	Grab	Effluent
pH	All Year	6	SU	DMin Conc	Weekdays	Grab	Effluent

Table 6-23. Permit Limits for Jonesborough STP.**Enforcement:**

Director's Order # 03-061D: For failure to report sanitary sewer overflow.

Agreed Order #04-041D: For failure to send in a semi-annual report for pre-treatment

Comments:

None

TN0024406 Davy Crockett High School

Discharger rating: Minor
City: Jonesborough
County: Washington
EFO Name: Johnson City
Issuance Date: 1/1/06
Expiration Date: 10/31/10
Receiving Stream(s): Little Limestone Creek at mile 8.8
HUC-12: 080102030303
Effluent Summary: Treated municipal wastewater from Outfall 001
Treatment system: Extended aeration

Segment	TN06010108510_2000
Name	Little Limestone Creek
Size	13.5
Unit	Miles
First Year on 303(d) List	2004
Designated Uses	Livestock Watering and Wildlife (Supporting), Irrigation (Supporting), Fish and Aquatic Life (Non-Supporting), Recreation (Non-Supporting)
Causes	Physical substrate habitat alterations, Escherichia coli
Sources	Grazing in Riparian or Shoreline Zones

Table 6-24. Stream Segment Information for Davy Crockett High School.

PARAMETER	SEASON	LIMIT	UNITS	SAMPLE DESIGNATOR	MONITORING FREQUENCY	SAMPLE TYPE	MONITORING LOCATION
BOD5	All Year	45	mg/L	DMax Conc	2/Month	Grab	Effluent
BOD5	All Year	30	mg/L	MAvg Conc	2/Month	Grab	Effluent
D.O.	All Year	1	mg/L	DMin Conc	Weekdays	Grab	Effluent
E. coli	All Year	941	#/100mL	DMax Conc	2/Month	Grab	Effluent
E. coli	All Year	126	#/100mL	MAvg Conc	2/Month	Grab	Effluent
Flow	All Year		MGD	MAvg Load	Weekdays	Instantaneous	Effluent
Flow	All Year		MGD	DMax Load	Weekdays	Instantaneous	Effluent
Settleable Solids	All Year	1	mL/L	DMax Conc	2/Week	Grab	Effluent
TRC	All Year	0.5	mg/L	DMax Conc	Weekdays	Grab	Effluent
TSS	All Year	45	mg/L	DMax Conc	2/Month	Grab	Effluent
TSS	All Year	30	mg/L	MAvg Conc	2/Month	Grab	Effluent
pH	All Year	9	SU	DMax Conc	2/Week	Grab	Effluent
pH	All Year	6	SU	DMin Conc	2/Week	Grab	Effluent

Table 6-25. Permit Limits for Davy Crockett High School.**Comments:**

None

TN0056332 John M. Reed Home, Inc.

Discharger rating: Minor
City: Jonesborough
County: Washington
EFO Name: Johnson City
Issuance Date: 6/1/06
Expiration Date: 12/30/10
Receiving Stream(s): Little Limestone Creek at mile 3.8
HUC-12: 080102030303
Effluent Summary: Treated domestic wastewater from Outfall 001
Treatment system: Extended aeration

Segment	TN06010108030_2000
Name	Big Limestone Creek
Size	8.8
Unit	Miles
First Year on 303(d) List	1990
Designated Uses	Livestock Watering and Wildlife (Supporting), Irrigation (Supporting), Fish and Aquatic Life (Non-Supporting), Recreation (Non-Supporting)
Causes	Nitrates, Phosphate, Sedimentation/Siltation, Escherichia coli
Sources	Grazing in Riparian or Shoreline Zones

Table 6-26. Stream Segment Information for John M. Reed Home, Inc.

PARAMETER	SEASON	LIMIT	UNITS	SAMPLE DESIGNATOR	MONITORING FREQUENCY	SAMPLE TYPE	MONITORING LOCATION
BOD5	All Year	45	mg/L	DMax Conc	Monthly	Grab	Effluent
BOD5	All Year	30	mg/L	MAvg Conc	Monthly	Grab	Effluent
D.O.	All Year	1	mg/L	DMin Conc	Weekdays	Grab	Effluent
E. coli	All Year	126	#/100mL	MAvg Geo Mean	Monthly	Grab	Effluent
E. coli	All Year	941	#/100mL	MAvg Ari Mean	Monthly	Grab	Effluent
Flow	All Year		MGD	MAvg Load	Weekdays	Instantaneous	Effluent
Flow	All Year		MGD	DMax Load	Weekdays	Instantaneous	Effluent
Settleable Solids	All Year	1	mL/L	DMax Conc	2/Week	Grab	Effluent
TRC	All Year	2	mg/L	DMax Conc	Weekdays	Grab	Effluent
TSS	All Year	30	mg/L	MAvg Conc	Monthly	Grab	Effluent
TSS	All Year	45	mg/L	DMax Conc	Monthly	Grab	Effluent
pH	All Year	6	SU	DMin Conc	2/Week	Grab	Effluent
pH	All Year	9	SU	DMax Conc	2/Week	Grab	Effluent

Table 6-27. Permit Limits for John M. Reed Home, Inc.**Comments:**

None

TN0054887 Centerview Elementary School

Discharger rating: Minor
City: Bybee
County: Cocke
EFO Name: Johnson City
Issuance Date: 11/1/05
Expiration Date: 9/30/10
Receiving Stream(s): Slate Creek at mile 3.3
HUC-12: 080102030303
Effluent Summary: Treated domestic wastewater from Outfall 001
Treatment system: Extended aeration

PARAMETER	SEASON	LIMIT	UNITS	DESIGNATOR	FREQUENCY	SAMPLE TYPE	MONITORING LOCATION
Ammonia as N (Total)	All Year	10	mg/L	DMax Conc	2/Month	Grab	Effluent
Ammonia as N (Total)	All Year	5	mg/L	MAvg Conc	2/Month	Grab	Effluent
CBOD5	All Year	25	mg/L	MAvg Conc	2/Month	Grab	Effluent
CBOD5	All Year	40	mg/L	DMax Conc	2/Month	Grab	Effluent
D.O.	All Year	6	mg/L	DMin Conc	Weekdays	Grab	Effluent
E. coli	All Year	126	#/100mL	MAvg Conc	2/Month	Grab	Effluent
E. coli	All Year	941	#/100mL	DMax Conc	2/Month	Grab	Effluent
Flow	All Year		MGD	MAvg Load	Weekdays	Instantaneous	Effluent
Flow	All Year		MGD	DMax Load	Weekdays	Instantaneous	Effluent
Settleable Solids	All Year	1	mL/L	DMax Conc	2/Week	Grab	Effluent
TRC	All Year	0.1	mg/L	DMax Conc	Weekdays	Grab	Effluent
TSS	All Year	45	mg/L	DMax Conc	2/Month	Grab	Effluent
TSS	All Year	30	mg/L	MAvg Conc	2/Month	Grab	Effluent
pH	All Year	9	SU	DMax Conc	2/Week	Grab	Effluent
pH	All Year	6.5	SU	DMin Conc	2/Week	Grab	Effluent

Table 6-28. Permit Limits for Centerview Elementary School.

Comments:

None

6.4.B. Industrial Permits**TN0001899 Jarden Zinc Products, Inc.**

Discharger rating: Minor
City: Greeneville
County: Greene
EFO Name: Johnson City
Issuance Date: 11/1/01
Expiration Date: 9/28/05
Receiving Stream(s): Mile 2.9 of Sinking Creek (Outfalls 001, SW1 and 02E) and mile 60.5 of the Nolichucky River (Outfall 002) and Outfall 004 at mile 2.8 of Sinking Creek

HUC-12: 080102030303
Effluent Summary: Noncontact cooling water and air conditioner cooling water from Outfall 001 during dry weather conditions; noncontact cooling water, air conditioner cooling water, and storm water runoff through Outfalls SW1 and 004 during wet weather conditions; treated process wastewater, treated sanitary wastewater, and remediated groundwater through Outfall 002; and treated process wastewater, treated sanitary wastewater, and remediated groundwater through Outfall 02E under emergency conditions

Treatment system: -

Segment	TN06010108064_1000
Name	Sinking Creek
Size	3.8
Unit	Miles
First Year on 303(d) List	1990
Designated Uses	Irrigation (Supporting), Recreation (Non-Supporting), Livestock Watering and Wildlife (Supporting), Fish and Aquatic Life (Supporting), Industrial Water Supply (Supporting)
Causes	Escherichia coli
Sources	Grazing in Riparian or Shoreline Zones

Table 6-29. Stream Segment Information for Jarden Zinc Products, Inc.

PARAMETER	SEASON	LIMIT	UNITS	SAMPLE DESIGNATOR	MONITORING FREQUENCY	SAMPLE TYPE	MONITORING LOCATION
48hr LC50: Ceriodaphnia Dubia	All Year	3.7	Percent	DMin Conc	Continuous	Composite	Effluent
48hr LC50: Fathead Minnows	All Year	3.7	Percent	DMin Conc	Continuous	Composite	Effluent
Ag (T)	All Year		mg/L	DMax Conc	1/Discharge	Grab	Effluent
Cd (T)	All Year		mg/L	DMax Conc	1/Discharge	Grab	Effluent
Cr (T)	All Year		mg/L	DMax Conc	1/Discharge	Grab	Effluent
Cu (T)	All Year		mg/L	DMax Conc	1/Discharge	Grab	Effluent
Cyanide, Total (CN-)	All Year		mg/L	DMax Conc	1/Discharge	Grab	Effluent
Duration of Discharge	All Year		Hours/Day	DMax Load	1/Discharge	Grab	Effluent
Duration of Discharge	All Year		Hours/Day	MAvg Load	1/Discharge	Grab	Effluent
Flow	All Year		MGD	DMax Load	1/Discharge	Recorder	Effluent
Flow	All Year		MGD	MAvg Load	1/Discharge	Recorder	Effluent
Ni (T)	All Year		mg/L	DMax Conc	1/Discharge	Grab	Effluent
Pb (T)	All Year		mg/L	DMax Conc	1/Discharge	Grab	Effluent
Zn (T)	All Year		mg/L	DMax Conc	1/Discharge	Grab	Effluent
pH	All Year	9	SU	DMax Conc	1/Discharge	Grab	Effluent
pH	All Year	6	SU	DMin Conc	1/Discharge	Grab	Effluent

Table 6-30. Permit Limits for Outfall 02E at Jarden Zinc Products, Inc.

PARAMETER	SEASON	LIMIT	UNITS	SAMPLE DESIGNATOR	MONITORING FREQUENCY	SAMPLE TYPE	MONITORING LOCATION
Flow	All Year		MGD	DMax Load	Semi-annually	Estimate	Effluent
TSS	All Year		mg/L	DMax Conc	Semi-annually	Grab	Effluent
Zn (T)	All Year		mg/L	DMax Conc	Semi-annually	Grab	Effluent
pH	All Year		SU	DMax Conc	Semi-annually	Grab	Effluent

Table 6-31. Permit Limits for Outfall SW1 at Jarden Zinc Products, Inc.

PARAMETER	SEASON	LIMIT	UNITS	SAMPLE DESIGNATOR	MONITORING FREQUENCY	SAMPLE TYPE	MONITORING LOCATION
Ag (T)	All Year	0.2	mg/L	DMax Conc	Monthly	Composite	Effluent
Cd (T)	All Year	0.7	mg/L	DMax Conc	Monthly	Composite	Effluent
Cd (T)	All Year	0.26	mg/L	MAvg Conc	Monthly	Composite	Effluent
Cr (T)	All Year	2.8	mg/L	DMax Conc	Monthly	Composite	Effluent
Cr (T)	All Year	1.71	mg/L	MAvg Conc	Monthly	Composite	Effluent
Cu (T)	All Year	3.4	mg/L	DMax Conc	Monthly	Composite	Effluent
Cu (T)	All Year	2.07	mg/L	MAvg Conc	Monthly	Composite	Effluent
Cyanide, Total (CN-)	All Year	1.2	mg/L	DMax Conc	Monthly	Grab	Effluent
Cyanide, Total (CN-)	All Year	0.65	mg/L	MAvg Conc	Monthly	Grab	Effluent
Flow	All Year		MGD	DMax Load	Continuous	Recorder	Effluent
Flow	All Year		MGD	MAvg Load	Continuous	Recorder	Effluent
Ni (T)	All Year	4	mg/L	DMax Conc	Monthly	Composite	Effluent
Ni (T)	All Year	2.38	mg/L	MAvg Conc	Monthly	Composite	Effluent
Oil and Grease (Freon EM)	All Year	54	mg/L	DMax Conc	Monthly	Composite	Effluent
Oil and Grease (Freon EM)	All Year	27.2	mg/L	MAvg Conc	Monthly	Composite	Effluent
Pb (T)	All Year	0.7	mg/L	DMax Conc	Monthly	Composite	Effluent
Pb (T)	All Year	0.43	mg/L	MAvg Conc	Monthly	Composite	Effluent
TSS	All Year	64.1	mg/L	DMax Conc	Monthly	Composite	Effluent
TSS	All Year	32.9	mg/L	MAvg Conc	Monthly	Composite	Effluent
Total Toxic Organics (TTO) (40CFR433)	All Year	2.13	mg/L	DMax Conc	Monthly	Grab	Effluent
Zn (T)	All Year	2.6	mg/L	DMax Conc	Monthly	Composite	Effluent
Zn (T)	All Year	1.48	mg/L	MAvg Conc	Monthly	Composite	Effluent
pH	All Year	9	SU	DMax Conc	Weekly	Grab	Effluent
pH	All Year	6	SU	DMin Conc	Weekly	Grab	Effluent

Table 6-32. Permit Limits for Outfall 02A at Jarden Zinc Products, Inc.

PARAMETER	SEASON	LIMIT	UNITS	SAMPLE DESIGNATOR	MONITORING FREQUENCY	SAMPLE TYPE	MONITORING LOCATION
BOD5	All Year	45	mg/L	DMax Conc	2/Month	Grab	Effluent
BOD5	All Year	30	mg/L	MAvg Conc	2/Month	Grab	Effluent
Fecal Coliform	All Year	1000	#/100mL	DMax Conc	2/Month	Grab	Effluent
Fecal Coliform	All Year	200	#/100mL	MAvg Geo Mean	2/Month	Grab	Effluent
Flow	All Year		MGD	DMax Load	Continuous	Recorder	Effluent
Flow	All Year		MGD	MAvg Load	Continuous	Recorder	Effluent
Settleable Solids	All Year	0.5	mL/L	DMax Conc	2/Week	Grab	Effluent
TSS	All Year	45	mg/L	DMax Conc	2/Month	Grab	Effluent
TSS	All Year	30	mg/L	MAvg Conc	2/Month	Grab	Effluent
pH	All Year	9	SU	DMax Conc	2/Week	Grab	Effluent
pH	All Year	6	SU	DMin Conc	2/Week	Grab	Effluent

Table 6-33. Permit Limits for Outfall 02B at Jarden Zinc Products, Inc.

PARAMETER	SEASON	LIMIT	UNITS	SAMPLE DESIGNATOR	MONITORING FREQUENCY	SAMPLE TYPE	MONITORING LOCATION
1,2-Cis-Dichloroethylene	All Year		mg/L	DMax Conc	Monthly	Grab	Effluent
1,2-Dichloroethane	All Year		mg/L	DMax Conc	Monthly	Grab	Effluent
Benzene	All Year	0.005	mg/L	DMax Conc	Monthly	Grab	Effluent
Ethylbenzene	All Year	0.01	mg/L	DMax Conc	Monthly	Grab	Effluent
Flow	All Year		GPD	DMax Load	Daily	Totalizer	Effluent
Flow	All Year		GPD	MAvg Load	Daily	Totalizer	Effluent
Tetrachloroethylene	All Year		mg/L	DMax Conc	Monthly	Grab	Effluent
Toluene	All Year	0.01	mg/L	DMax Conc	Monthly	Grab	Effluent
Trichloroethylene	All Year		mg/L	DMax Conc	Monthly	Grab	Effluent
Xylene	All Year	0.01	mg/L	DMax Conc	Monthly	Grab	Effluent

Table 6-34. Permit Limits for Outfall 02C at Jarden Zinc Products, Inc.

PARAMETER	SEASON	LIMIT	UNITS	SAMPLE DESIGNATOR	MONITORING FREQUENCY	SAMPLE TYPE	MONITORING LOCATION
Flow	All Year		MGD	DMax Load	Weekdays	Instantaneous	Effluent
Flow	All Year		MGD	MAvg Load	Weekdays	Instantaneous	Effluent
Temperature (°C)	All Year		Deg. C	DMax Conc	Weekdays	Grab	Effluent
pH	All Year	9	SU	DMax Conc	Weekdays	Grab	Effluent
pH	All Year	6	SU	DMin Conc	Weekdays	Grab	Effluent

Table 6-35. Permit Limits for Outfall 001 at Jarden Zinc Products, Inc.

Segment	TN06010108010_2000
Name	Nolichucky River
Size	6.5
Unit	Miles
First Year on 303(d) List	1990
Designated Uses	Domestic Water Supply (Supporting), Livestock Watering and Wildlife (Supporting), Irrigation (Supporting), Recreation (Supporting), Industrial Water Supply (Supporting), Fish and Aquatic Life (Non-Supporting)
Causes	Sedimentation/Siltation
Sources	Grazing in Riparian or Shoreline Zones, Sources Outside State Jurisdiction or Borders

Table 6-36. Stream Segment Information for Outfall 002 at Jarden Zinc Products, Inc.

PARAMETER	SEASON	LIMIT	UNITS	SAMPLE DESIGNATOR	MONITORING FREQUENCY	SAMPLE TYPE	MONITORING LOCATION
48hr LC50: Ceriodaphnia Dubia	All Year	1.1	Percent	DMin Conc	Monthly	Composite	Effluent
48hr LC50: Fathead Minnows	All Year	1.1	Percent	DMin Conc	Monthly	Composite	Effluent
Flow	All Year		MGD	DMax Load	Continuous	Recorder	Effluent
Flow	All Year		MGD	MAvg Load	Continuous	Recorder	Effluent
pH	All Year	9	SU	DMax Conc	Weekdays	Grab	Effluent
pH	All Year	6	SU	DMin Conc	Weekdays	Grab	Effluent

Table 6-37. Permit Limits for Outfall 002 at Jarden Zinc Products, Inc.

Compliance History:

The following numbers of exceedences were noted in PCS:

- 1 Xylene

Comments:

Melting & casting of alloyed zinc strip, rolling & drawing of non-ferrous metals (zinc), and stamping & electroplating of ferrous and non-ferrous coinage products.

4/21/2006: Received addendum to original permit application describing a new zinc plating line that will expand the facility operation. Prepared a letter indicating that the current permit would authorize this operational change, in case the new permit is not issued prior to start up - 7/26/06

TN0054844 Plus Mark Inc.

Discharger rating: Minor
City: Afton
County: Greene
EFO Name: Johnson City
Issuance Date: 1/01/06
Expiration Date: 11/30/10
Receiving Stream(s): Sinking Creek at mile 2.8
HUC-12: 080102030303
Effluent Summary: Treated domestic wastewater from Outfall 001
Treatment system: Extended aeration treatment system is changed to septic tank, recirculating sand filter and UV disinfection

Name	TN06010108064_1000
Size	Sinking Creek
Unit	3.8
First Year on 303(d) List	Miles
Designated Uses	1990
Causes	Irrigation (Supporting), Recreation (Non-Supporting), Livestock Watering and Wildlife (Supporting), Fish and Aquatic Life (Supporting), Industrial Water Supply (Supporting)
Sources	Escherichia coli
Name	Grazing in Riparian or Shoreline Zones

Table 6-38. Stream Segment Information for Plus Mark Inc.

PARAMETER	SEASON	LIMIT	UNITS	SAMPLE DESIGNATOR	MONITORING FREQUENCY	SAMPLE TYPE	MONITORING LOCATION
Ammonia as N (Total)	All Year	5	mg/L	MAvg Conc	2/Month	Grab	Effluent
Ammonia as N (Total)	All Year	10	mg/L	DMax Conc	2/Month	Grab	Effluent
BOD5	All Year	25	mg/L	MAvg Conc	2/Month	Grab	Effluent
BOD5	All Year	40	mg/L	DMax Conc	2/Month	Grab	Effluent
D.O.	All Year	2	mg/L	DMin Conc	Weekdays	Grab	Effluent
Flow	All Year		MGD	MAvg Load	Weekdays	Instantaneous	Effluent
Flow	All Year		MGD	DMax Load	Weekdays	Instantaneous	Effluent
Settleable Solids	All Year	1	mg/L	DMax Conc	2/Week	Grab	Effluent
TRC	All Year	1	mg/L	DMax Conc	Weekdays	Grab	Effluent
TSS	All Year	30	mg/L	MAvg Conc	2/Month	Grab	Effluent
TSS	All Year	45	mg/L	DMax Conc	2/Month	Grab	Effluent
pH	All Year	6	SU	DMin Conc	2/Week	Grab	Effluent
pH	All Year	9	SU	DMax Conc	2/Week	Grab	Effluent

Table 6-39. Permit Limits for Plus Mark Inc.

DRAFT

Comments: Revised permit application received 2/1/07. Presently working on plans for a replacement wastewater treatment plant, Permit Section should be working on the application/permit modification, plans submission/review/approval to follow the permitting decision(s), planning to start construction as soon as possible, generally good compliance

TN0073466 Cansler Farm Site #3

Discharger rating: Minor
City: Greeneville
County: Greene
EFO Name: Johnson City
Issuance Date: 6/01/05
Expiration Date: 8/31/10
Receiving Stream(s): Pond Creek at mile 0.9 to Mink Creek at mile 1.3 to Lick Creek at mile 16.0
HUC-12: 080102030303
Effluent Summary: Treated groundwater through Outfall 001
Treatment system: Filtration and carbon absorption units

Segment	TN06010108035_2810
Name	Pond Creek
Size	2.2
Unit	Miles
First Year on 303(d) List	2004
Designated Uses	Fish and Aquatic Life (Non-Supporting), Recreation (Not Assessed), Irrigation (Supporting), Livestock Watering and Wildlife (Supporting)
Causes	Physical substrate habitat alterations
Sources	Grazing in Riparian or Shoreline Zones

Table 6-40. Stream Segment Information for Cansler Farm Site #3.

PARAMETER	SEASON	LIMIT	UNITS	SAMPLE DESIGNATOR	MONITORING FREQUENCY	SAMPLE TYPE	MONITORING LOCATION
1,1,1-Trichloroethane	All Year	10	ug/L	DMax Conc	Monthly	Grab	Effluent
1,1-Dichloroethane	All Year	10	ug/L	DMax Conc	Monthly	Grab	Effluent
Methylene Chloride	All Year	10	ug/L	DMax Conc	Monthly	Grab	Effluent
TRC	All Year		mg/L	MAvg Conc	Monthly	Grab	Effluent
Toluene	All Year	10	ug/L	DMax Conc	Monthly	Grab	Effluent
pH	All Year	9	SU	DMax Conc	Monthly	Grab	Effluent
pH	All Year	6	SU	DMin Conc	Monthly	Grab	Effluent

Table 6-41. Permit Limits for Cansler Farm Site #3.**Comments:**

None

TN0002038 Nuclear Fuel Services

Discharger rating: Minor
City: Erwin
County: Unicoi
EFO Name: Johnson City
Issuance Date: 8/01/06
Expiration Date: 8/31/10
Receiving Stream(s): Nolichucky River at mile 94.6 for Outfall 001
HUC-12: 080102030303
Effluent Summary: Process wastewater, laboratory facilities, laundry facility, fuel production facilities, low enriched radioactive operation, miscellaneous, high enriched radioactive recovery operations, fuel development through Outfall 001
Treatment system: Waste segregation, Ammonia Stripping, Chemical Precipitation, Flocculation, Pressure Filtration, Dollinger Filter, Ion Exchange, Neutralization

Segment	TN06010108010_5000
Name	Nolichucky River
Size	9.55
Unit	Miles
First Year on 303(d) List	-
Designated Uses	Domestic Water Supply (Supporting), Industrial Water Supply (Supporting), Fish and Aquatic Life (Supporting), Recreation (Not Assessed), Irrigation (Supporting), Livestock Watering and Wildlife (Supporting)
Causes	N/A
Sources	N/A

Table 6-42. Stream Segment Information for Nuclear Fuel Services.

PARAMETER	SEASON	LIMIT	UNITS	SAMPLE DESIGNATOR	MONITORING FREQUENCY	SAMPLE TYPE	MONITORING LOCATION
Ag (T)	All Year	0.05	mg/L	DMax Conc	Monthly	Grab	Effluent
Ammonia as N (Total)	All Year	30	mg/L	DMax Conc	1/Batch	Grab	Effluent
Ammonia as N (Total)	All Year	20	mg/L	MAvg Conc	1/Batch	Grab	Effluent
As (T)	All Year		mg/L	DMax Conc	Quarterly	Grab	Effluent
COD	All Year	370	mg/L	DMax Conc	Monthly	Grab	Effluent
Cd (T)	All Year	0.01	mg/L	DMax Conc	Monthly	Grab	Effluent
Cr (T)	All Year		mg/L	DMax Conc	Quarterly	Grab	Effluent
Cu (T)	All Year	1	mg/L	DMax Conc	Monthly	Grab	Effluent
F (T)	All Year	20	mg/L	DMax Conc	1/Batch	Grab	Effluent
F (T)	All Year	15	mg/L	MAvg Conc	1/Batch	Grab	Effluent
Flow	All Year		MGD	DMax Load	1/Batch	Estimate	Effluent
Flow	All Year		MGD	MAvg Load	1/Batch	Estimate	Effluent
Hg (T)	All Year	0.05	mg/L	DMax Conc	1/Batch	Grab	Effluent
Hg (T)	All Year	0.0004	mg/L	MAvg Conc	1/Batch	Grab	Effluent

Table 6-43a.

PARAMETER	SEASON	LIMIT	UNITS	SAMPLE DESIGNATOR	MONITORING FREQUENCY	SAMPLE TYPE	MONITORING LOCATION
Ni (T)	All Year		mg/L	DMax Conc	Quarterly	Grab	Effluent
Nitrite + Nitrate Total (as N)	All Year	420	lb/day	DMax Load	1/Batch	Grab	Effluent
Pb (T)	All Year	0.1	mg/L	DMax Conc	Monthly	Grab	Effluent
Settleable Solids	All Year	0.5	mL/L	DMax Conc	1/Batch	Grab	Effluent
TRC	All Year	2	mg/L	DMax Conc	1/Batch	Grab	Effluent
TSS	All Year	40	mg/L	DMax Conc	1/Batch	Grab	Effluent
TSS	All Year	30	mg/L	MAvg Conc	1/Batch	Grab	Effluent
Tetrachloroethylene	All Year		mg/L	DMax Conc	Quarterly	Grab	Effluent
Uranium Natural Total	All Year	4	mg/L	DMax Conc	1/Batch	Grab	Effluent
Uranium Natural Total	All Year	2	mg/L	MAvg Conc	1/Batch	Grab	Effluent
pH	All Year	9	SU	DMax Conc	1/Batch	Grab	Effluent
pH	All Year	6	SU	DMin Conc	1/Batch	Grab	Effluent

Table 6-43b.**Tables 6-43a-b. Permit Limits for Nuclear Fuel Services.****Compliance History:**

The following numbers of exceedences were noted in PCS:

- 1 Mercury
- 1 Ammonia
- 1 Nitrite + Nitrate

Comments:

Nuclear fuel manufacturing and uranium recovery facility. Also conducts decommissioning/remediating and groundwater treatment activities related to past activities.

TN0023973 Hoover Precision Products, Inc

Discharger rating: Minor
City: Erwin
County: Unicoi
EFO Name: Johnson City
Issuance Date: 8/01/06
Expiration Date: 6/30/10
Receiving Stream(s): McInturff Branch at mile 0.16 to North Indian Creek at mile 1.0
HUC-12: 080102030303
Effluent Summary: Industrial process wastewater, storm water runoff and non-contact cooling water through Outfall 001
Treatment system: -

Segment	TN06010108029_1000
Name	North Indian Creek
Size	8
Unit	Miles
First Year on 303(d) List	-
Designated Uses	Livestock Watering and Wildlife (Supporting), Domestic Water Supply (Supporting), Industrial Water Supply (Supporting), Fish and Aquatic Life (Non-Supporting), Recreation (Not Assessed), Irrigation (Supporting)
Causes	Sedimentation/Siltation
Sources	Discharges from Municipal Separate Storm Sewer Systems (MS4)

Table 6-44. Stream Segment Information for Hoover Precision Products, Inc.

PARAMETER	SEASON	LIMIT	UNITS	SAMPLE DESIGNATOR	MONITORING FREQUENCY	SAMPLE TYPE	MONITORING LOCATION
BOD5	All Year	45	mg/L	DMax Conc	2/Month	Grab	Effluent
BOD5	All Year	30	mg/L	MAvg Conc	2/Month	Grab	Effluent
Flow	All Year		MGD	DMax Load	Weekdays	Instantaneous	Effluent
Flow	All Year		MGD	MAvg Load	2/Month	Instantaneous	Effluent
Oil and Grease (Freon EM)	All Year	16.9	mg/L	DMax Conc	2/Month	Grab	Effluent
Oil and Grease (Freon EM)	All Year	10	mg/L	MAvg Conc	2/Month	Grab	Effluent
Settleable Solids	All Year	0.5	mL/L	DMax Conc	Monthly	Grab	Effluent
TSS	All Year	41	mg/L	DMax Conc	2/Month	Grab	Effluent
pH	All Year	9	SU	DMax Conc	2/Month	Grab	Effluent
pH	All Year	6	SU	DMin Conc	2/Month	Grab	Effluent

Table 6-45. Permit Limits for Hoover Precision Products, Inc.**Compliance History:**

The following numbers of exceedences were noted in PCS:

- 1 Settleable Solids

Comments: None

TN0057983 Aerojet Ordinance Tennessee

Discharger rating: Minor
City: Jonesborough
County: Washington
EFO Name: Johnson City
Issuance Date: 2/1/02
Expiration Date: 12/31/05
Receiving Stream(s): Little Limestone Creek at miles 8.7 (Outfall 001) and 8.8 (Outfalls 002 and 003)
HUC-12: 080102030303
Effluent Summary: Treated process wastewater through Outfall 001, non-contact cooling water and cooling tower blowdown through Outfall 002, and treated sanitary wastewater through Outfall 003

Treatment system:

Segment	TN06010108510_2000
Name	Little Limestone Creek
Size	13.5
Unit	Miles
First Year on 303(d) List	2004
Designated Uses	Livestock Watering and Wildlife (Supporting), Irrigation (Supporting), Fish and Aquatic Life (Non-Supporting), Recreation (Non-Supporting)
Causes	Physical substrate habitat alterations, Escherichia coli
Sources	Grazing in Riparian or Shoreline Zones

Table 6-46. Stream Segment Information for Aerojet Ordinance Tennessee.

PARAMETER	SEASON	LIMIT	UNITS	SAMPLE DESIGNATOR	MONITORING FREQUENCY	SAMPLE TYPE	MONITORING LOCATION
Cd (T)	All Year	0.006	lb/day	DMax Load	Semi-annually	Grab	Effluent
Cd (T)	All Year	0.002	lb/day	MAvg Load	Semi-annually	Grab	Effluent
Cr (T)	All Year	0.051	lb/day	DMax Load	Semi-annually	Grab	Effluent
Cr (T)	All Year	0.025	lb/day	MAvg Load	Semi-annually	Grab	Effluent
Cu (T)	All Year	0.05	lb/day	DMax Load	Semi-annually	Grab	Effluent
Cu (T)	All Year	0.027	lb/day	MAvg Load	Semi-annually	Grab	Effluent
F (T)	All Year	1.974	lb/day	DMax Load	Weekly	Grab	Effluent
F (T)	All Year	0.89	lb/day	MAvg Load	Weekly	Grab	Effluent
Flow	All Year		MGD	DMax Load	1/Batch	Estimate	Effluent
IC25 7day Ceriodaphnia Dubia	All Year	1.2	Percent	DMin Conc	Continuous	Grab	Effluent
IC25 7day Fathead Minnows	All Year	1.2	Percent	DMin Conc	Continuous	Grab	Effluent
Lead Total Dry Weight (as Pb)	All Year	0.009	lb/day	DMax Load	Semi-annually	Grab	Effluent
Lead Total Dry Weight (as Pb)	All Year	0.004	lb/day	MAvg Load	Semi-annually	Grab	Effluent
Mo (T)	All Year	0.144	lb/day	DMax Load	Semi-annually	Grab	Effluent
Mo (T)	All Year	0.064	lb/day	MAvg Load	Semi-annually	Grab	Effluent
Ni (T)	All Year	0.056	lb/day	DMax Load	Semi-annually	Grab	Effluent
Ni (T)	All Year	0.031	lb/day	MAvg Load	Semi-annually	Grab	Effluent
Oil and Grease (Freon EM)	All Year	2.324	lb/day	DMax Load	Weekly	Grab	Effluent
Oil and Grease (Freon EM)	All Year	1.354	lb/day	MAvg Load	Weekly	Grab	Effluent
Settleable Solids	All Year	0.5	mL/L	DMax Conc	Weekly	Grab	Effluent
TSS	All Year	4.471	lb/day	DMax Load	Weekly	Grab	Effluent
TSS	All Year	2.141	lb/day	MAvg Load	Weekly	Grab	Effluent
Uranium Natural Total	All Year	12	mg/L	DMax Conc	Weekly	Grab	Effluent
pH	All Year	9	SU	DMax Conc	Weekly	Grab	Effluent
pH	All Year	6	SU	DMin Conc	Weekly	Grab	Effluent

Table 6-47. Permit Limits for Outfall 001 at Aerojet Ordinance Tennessee.

PARAMETER	SEASON	LIMIT	UNITS	SAMPLE DESIGNATOR	MONITORING FREQUENCY	SAMPLE TYPE	MONITORING LOCATION
Flow	All Year		MGD	DMax Load	2/Month	Estimate	Effluent
Flow	All Year		MGD	MAvg Load	2/Month	Estimate	Effluent
Temperature (°C)	All Year		Deg. C	DMax Conc	2/Month	Grab	Effluent
pH	All Year	9	SU	DMax Conc	2/Month	Grab	Effluent
pH	All Year	6	SU	DMin Conc	2/Month	Grab	Effluent

Table 6-48. Permit Limits for Outfall 002 at Aerojet Ordinance Tennessee.

PARAMETER	SEASON	LIMIT	UNITS	SAMPLE DESIGNATOR	MONITORING FREQUENCY	SAMPLE TYPE	MONITORING LOCATION
Ammonia as N (Total)	All Year	20	mg/L	DMax Conc	2/Month	Grab	Effluent
Ammonia as N (Total)	All Year	15	mg/L	MAvg Conc	2/Month	Grab	Effluent
BOD5	All Year	45	mg/L	DMax Conc	2/Month	Grab	Effluent
BOD5	All Year	30	mg/L	MAvg Conc	2/Month	Grab	Effluent
D.O.	All Year	1	mg/L	DMin Conc	Weekdays	Grab	Effluent
Fecal Coliform	All Year	1000	#/100mL	DMax Conc	2/Month	Grab	Effluent
Fecal Coliform	All Year	200	#/100mL	MAvg Geo Mean	2/Month	Grab	Effluent
Flow	All Year		MGD	DMax Load	Continuous	Recorder	Effluent
Flow	All Year		MGD	MAvg Load	Continuous	Recorder	Effluent
Settleable Solids	All Year	0.5	mL/L	DMax Conc	2/Week	Grab	Effluent
TRC	All Year	2	mg/L	DMax Conc	Weekdays	Grab	Effluent
TSS	All Year	45	mg/L	DMax Conc	2/Month	Grab	Effluent
TSS	All Year	30	mg/L	MAvg Conc	2/Month	Grab	Effluent
pH	All Year	9	SU	DMax Conc	2/Week	Grab	Effluent
pH	All Year	6	SU	DMin Conc	2/Week	Grab	Effluent

Table 6-49. Permit Limits for Outfall 003 at Aerojet Ordinance Tennessee.

Compliance History:

The following numbers of exceedences were noted in PCS:

- 4 Total Chlorine
- 2 pH
- 1 Total Chromium
- 1 Total Lead
- 1 Total Molybdenum
- 1 Fecal coliform

Enforcement:

Notice of Violation for Propylene glycol release from outfall 002

Comments:

Manufacturer of tungsten and uranium metal, alloys, castings, mill products and machined pieces. Permit Section currently working on permit renewal, generally good compliance is known although there may be some issue(s) with sample location (that will be explored further as part of permitting process)

TN0068187 Liberty Fibers Corporation

Discharger rating: Minor
City: Lowland
County: Hamblen
EFO Name: Johnson City
Issuance Date: 10/01/06
Expiration Date: 8/31/10
Receiving Stream(s): Nolichucky River at mile 7.6 (Outfall 001), Nolichucky River at mile 7.4 (Outfall 002) and Flat Creek (Outfalls 003, 004, S03, S04, S05) Note: Receiving stream is tier two stream, see no degradation statement in permit rationale
HUC-12: 080102030303
Effluent Summary: Treated industrial process wastewater, sanitary wastewater, misc. utilities wastewater, coal pile runoff, storm water runoff, and landfill leachate through Outfall 001, noncontact cooling water, reservoir drainage, and storm water runoff through Outfall 002, non-process rayon staple, idle plant building, shops, and miscellaneous discharges including pump seal water, A/C condensate, and condenser cooling water through Outfalls 003/004 and storm water runoff through Outfalls S03, S04 and S05
Treatment system: Activated sludge, stabilization pond and discharge to surface water

Segment	TN06010108001_2000
Name	Nolichucky River
Size	7.7
Unit	Miles
First Year on 303(d) List	1990
Designated Uses	Recreation (Non-Supporting), Livestock Watering and Wildlife (Supporting), Fish and Aquatic Life (Supporting), Industrial Water Supply (Supporting), Domestic Water Supply (Supporting), Irrigation (Supporting)
Causes	Escherichia coli
Sources	Grazing in Riparian or Shoreline Zones

Table 6-50. Stream Segment Information for Outfalls 001, 002, and 020 at Liberty Fibers Corporation.

Segment	TN06010108001_0100
Name	Flat Creek
Size	4.9
Unit	Miles
First Year on 303(d) List	1998
Designated Uses	Fish and Aquatic Life (Supporting), Recreation (Non-Supporting), Irrigation (Supporting), Livestock Watering and Wildlife (Supporting)
Causes	Escherichia coli
Sources	Grazing in Riparian or Shoreline Zones

Table 6-51. Stream Segment Information for Outfalls 003, 004, SW3, SW4, and SW5 at Liberty Fibers Corporation.

PARAMETER	SEASON	LIMIT	UNITS	SAMPLE DESIGNATOR	MONITORING FREQUENCY	SAMPLE TYPE	MONITORING LOCATION
Flow	All Year		MGD	MAvg Load	Quarterly	Instantaneous	Effluent
Flow	All Year		MGD	DMax Load	Quarterly	Instantaneous	Effluent
TOC	All Year		mg/L	DMax Conc	Quarterly	Grab	Effluent
Temperature Diff. Downstrm & Upstrm (°C)	All Year		°C	DMax Load	Daily	Grab	Effluent
pH	All Year		SU	DMax Conc	Quarterly	Grab	Effluent

Table 6-52. Permit Limits for Outfall 020 at Liberty Fibers Corporation.

PARAMETER	SEASON	LIMIT	UNITS	SAMPLE DESIGNATOR	MONITORING FREQUENCY	SAMPLE TYPE	MONITORING LOCATION
Ammonia as N (Total)	All Year		mg/L	DMax Conc	Weekly	Composite	Effluent
Ammonia as N (Total)	All Year		mg/L	MAvg Conc	Weekly	Composite	Effluent
BOD5	All Year	1161	lb/day	MAvg Load	3/Week	Composite	Effluent
BOD5	All Year		lb/day	DMax Load	3/Week	Composite	Effluent
Cr (T)	All Year		mg/L	DMax Conc	Semi-annually	Composite	Effluent
Cu (T)	All Year		mg/L	DMax Conc	Semi-annually	Composite	Effluent
Cyanide, Total (CN-)	All Year		mg/L	DMax Conc	Semi-annually	Composite	Effluent
Flow	All Year		MGD	DMax Load	Daily	Continuous	Effluent
Flow	All Year		MGD	MAvg Load	Daily	Continuous	Effluent
IC25 7day <i>Ceriodaphnia Dubia</i>	All Year	5.6	Percent	DMin Conc	Semi-annually	Composite	Effluent
IC25 7day Fathead Minnows	All Year	5.6	Percent	DMin Conc	Semi-annually	Composite	Effluent
Ni (T)	All Year		mg/L	DMax Conc	Semi-annually	Composite	Effluent
Pb (T)	All Year		mg/L	DMax Conc	Semi-annually	Composite	Effluent
TOC	All Year		mg/L	DMax Conc	Quarterly	Composite	Effluent
TOC	All Year		mg/L	MAvg Conc	Quarterly	Composite	Effluent
TSS	All Year		mg/L	DMax Conc	3/Week	Composite	Effluent
TSS	All Year		mg/L	MAvg Conc	3/Week	Composite	Effluent
Temperature Diff. Downstrm & Upstream (°C)	All Year		°C	DMax Load	Daily	Grab	Effluent
Zn (T)	All Year		mg/L	DMax Conc	Semi-annually	Composite	Effluent
pH	All Year	9	SU	DMax Conc	3/Week	Grab	Effluent
pH	All Year	6	SU	DMin Conc	3/Week	Grab	Effluent

Table 6-53. Permit Limits for Outfall 002 at Liberty Fibers Corporation.

Compliance History:

The following numbers of exceedences were noted in PCS:

- 1 Total Chlorine
- 1 Escherichia coli
- 1 Diethyl phthalate

Comments:

The wastewater treatment plant has been sold to an LLC headed by Mike Ball. Mr. Ball is interested in charging those remaining entities at this old industrial site for sewer service, and he is also interested in trucking in wastewater from outside the immediate area. He has been told he must apply for a permit as a Centralized Waste Treatment Plant. He has also been told that if he functions as a privately owned public utility providing service to the businesses connected to his plant, he must have a Certificate of Convenience and Necessity from the Tennessee Regulatory Authority.

Liberty Fibers likewise is being told their permit must change in a major way. They no longer own 001, the wastewater plant. They no longer control all the activities in the watershed of outfall 002 (this is Nylon Branch, which the Knoxville Office has determined meets our criteria as a stream), and the outfalls 003, and 004 are no longer part of a rayon process. In fact, the existing permit was written for a rayon plant that no longer exists and will never exist again. The rayon plant has been closed and its production works demolished or hauled away.

6.4.C. Water Treatment Permits**TN0004791 North Greene WTP**

Discharger rating: Minor
City: Greeneville
County: Greene
EFO Name: Johnson City
Issuance Date: 10/01/04
Expiration Date: 9/27/09
Receiving Stream(s): Lick Creek at mile 49.7
HUC-12: 080102030303
Effluent Summary: Filter backwash and/or sedimentation basin washdown from Outfall 001
Treatment system: Turbidity removal using PAC (coagulant), potassium permanganate, bleach, fluoride, hexametaphosphate

Segment	TN06010108035_7000
Name	Lick Creek
Size	9.4
Unit	Miles
First Year on 303(d) List	2004
Designated Uses	Domestic Water Supply (Supporting), Industrial Water Supply (Supporting), Fish and Aquatic Life (Non-Supporting), Recreation (Non-Supporting), Irrigation (Supporting), Livestock Watering and Wildlife (Supporting)
Causes	Nitrates, Physical substrate habitat alterations, Sedimentation/Siltation, Escherichia coli
Sources	Grazing in Riparian or Shoreline Zones

Table 6-54. Stream Segment Information for North Greene WTP.

PARAMETER	SEASON	LIMIT	UNITS	SAMPLE DESIGNATOR	MONITORING FREQUENCY	SAMPLE TYPE	MONITORING LOCATION
Al (T)	All Year	10	mg/L	DMax Conc	Monthly	Grab	Effluent
Flow	All Year		MGD	DMax Load	Monthly	Instantaneous	Effluent
Settleable Solids	All Year	0.5	mL/L	DMax Conc	Monthly	Grab	Effluent
TRC	All Year	0.35	mg/L	DMax Conc	Monthly	Grab	Effluent
TSS	All Year	40	mg/L	DMax Conc	Monthly	Grab	Effluent
pH	All Year	9	SU	DMax Conc	Monthly	Grab	Effluent
pH	All Year	6.5	SU	DMin Conc	Monthly	Grab	Effluent

Table 6-55. Permit Limits for North Greene WTP.

Comments: Turbidity removal WTP

TN0079090 Witt Utility District - Water Treatment Plant

Discharger rating: Minor
City: Morristown
County: Hamblen
EFO Name: Knoxville
Issuance Date: 7/17/06
Expiration Date: 9/27/09
Receiving Stream(s): Long Creek at approximate mile 2.8
HUC-12: 080102030303
Effluent Summary: Filter backwash and/or sedimentation basin washdown from Outfall 001
Treatment system: Polyaluminum chloride and chlorine bleach for pre-disinfection and coagulation, polymer injection, bleach for post-infection, and hydrofluorosilic acid as needed

Segment	TN06010108043_1000
Name	Long Creek
Size	13.5
Unit	Miles
First Year on 303(d) List	2002
Designated Uses	Livestock Watering and Wildlife (Supporting), Fish and Aquatic Life (Supporting), Recreation (Non-Supporting), Irrigation (Supporting)
Causes	Escherichia coli
Sources	Grazing in Riparian or Shoreline Zones

Table 6-56. Stream Segment Information for Witt Utility District - Water Treatment Plant.

PARAMETER	SEASON	LIMIT	UNITS	SAMPLE DESIGNATOR	MONITORING FREQUENCY	SAMPLE TYPE	MONITORING LOCATION
Flow	All Year		MGD	DMax Load	Monthly	Instantaneous	Effluent
Settleable Solids	All Year	0.5	mL/L	DMax Conc	Monthly	Grab	Effluent
TRC	All Year	0.12	mg/L	DMax Conc	Monthly	Grab	Effluent
TSS	All Year	40	mg/L	DMax Conc	Monthly	Grab	Effluent
pH	All Year	6.5	SU	DMin Conc	Monthly	Grab	Effluent
pH	All Year	9	SU	DMax Conc	Monthly	Grab	Effluent

Table 6-57. Permit Limits for Witt Utility District - Water Treatment Plant.**Comments:**

Turbidity removal WTP